

American Artisan

and Hardware Record

Sheet Metal - Roofing - Warm Air Furnaces - Stoves

Vol. 92, No. 13

CHICAGO, SEPTEMBER 25, 1926

\$2.00 Per Year

Horse Head Zinc—"No Complaints Whatever"



Club House of the Rensselaer Society of Engineers, Rensselaer Polytechnic Institute, Troy, N. Y. HorseHead Zinc roofing laid by F. E. Treuchet Co.

The photograph above is a noteworthy example of the use of Horse Head Zinc. It shows the acceptance of this metal by the highest technical authorities.

Of equal importance to sheet metal workers is Mr. Treuchet's statement that "Our men found no difficulty in working this material, as it was very pliable and easy to form into its proper shape without cracking or breaking in any way."

Are you familiar with this material of "No Complaints Whatever?" The coupon below will bring a sample. Send for it and test it yourself.

All standard shapes and sizes of Horse Head Zinc conductors, gutters and fittings are made and distributed by the following fabricators:

DAVID LUPTON'S SONS CO.	Philadelphia, Pa.
THE J. M. & L. A. OSBORN CO., Cleveland, Ohio	Buffalo, New York
KLAUER MANUFACTURING CO.	Dubuque, Iowa
HOLBROOK, MERRILL & STETSON	San Francisco, Oakland and Los Angeles, Cal.
SHEET METAL MANUFACTURING CO., INC.	Brooklyn, N. Y.

The New Jersey Zinc Company
160 Front Street - New York City



Td Room 4185

Model Cottage and Job Work
Tin and General Roofing

F. E. TREUCHET CO.
13 Sanson Street
Sheet Metal Contractors
Springfield, Mass.
June 17, 1926

The New Jersey Zinc Co.,
160 Front Street,
New York City.
Gentlemen:-

It was our privilege to install the Roofing on the Rensselaer Engineers' Building, at Troy, N. Y. The material used on this roof was crimped Horse Head Zinc, and it was laid in better a type construction. Our men found no difficulty in working this material, as it was very pliable and easy to form into its proper shape without cracking or breaking in any way. This work has been completed over two years, and so far, we have had no complaints whatever. In our judgment, we have given Horse Head Zinc a fair test for its working quality and durability, and found it satisfactory.

Very truly yours,

F. E. Treuchet
Pres. & Treas.

FET/h

THE NEW JERSEY ZINC COMPANY
160 Front Street - New York City
Please send me a sample of Horse Head Zinc so that I can test its easy working qualities:

NAME

ADDRESS

9-A

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for
Warm Air Heater
Pipe and Fittings

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Diversified Sizes

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37th and Iron Streets CHICAGO, ILLINOIS
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Warehouses at CHICAGO - PITTSBURGH - NEW YORK

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This or *This*

Small
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Pure Air in the Home

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IT is not necessary to worry along with the smoking, wasteful type of furnace that burns large quantities of fuel and furnishes little heat. You can eliminate the smoke nuisance forever—make substantial savings on coal bills—and have a clean furnace and a clean home—by installing the SUPER-SMOKELESS Warm-Air Furnace.

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There is a furnace that delivers an abundance of clean, healthful heat—saves you money on your fuel bills—and gives you the most comfortable, heating system ever known and known in the history of mankind. It is a furnace of highest quality, built in the most modern factory. It is a furnace that will give you the most healthful heating system.

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"Pioneers in Smokeless Combustion"
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Write for Complete Information Today

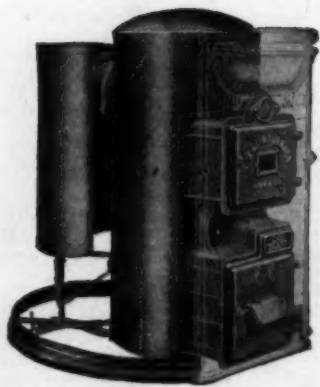
UTICA HEATER COMPANY

UTICA, N. Y. — CHICAGO, ILL. — MANUFACTURERS OF THE

CELEBRATED LINE OF WARM AIR FURNACES FOR EVERY HEATING NEED



Published Weekly by American Artisan and Hardware Record, Inc., 620 South Michigan Avenue, Chicago, Illinois.
 Entered as Second Class Matter June 26, 1897, at the Post Office at Chicago, Illinois, under act of March 3, 1879.



Weir Steel Furnace and "the volume dealer"

SOME of the biggest WEIR dealers today were of the opinion that only the cheaper grades of cast iron furnaces could be sold in large numbers for quick turn over and quick profits.

Today these same dealers find that it not only pays to sell a high quality furnace in all cases, but that it is especially desirable when selling in volume.

We would be glad to tell you how *you* can sell the WEIR in volume to the building contractors in your territory.



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Weir Facts"

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Peoria, Illinois



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for further particulars*

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*Manufacturers of single and double wall pipe
and fittings, galvanized pipe and fittings, etc.*

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Kansas City, Missouri Atlanta, Ga.
MONCRIEF FURNACE & MFG. CO.
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MONCRIEF FURNACES



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You, as a furnace dealer, with a desire to build a healthy business, owe it to your own pocketbook and to the welfare of the customers who spend their good money with you, to start right with a Front Rank Steel Furnace installed by the Standard Code—then success will be yours.



Up-to-date, businesslike Front Rank dealers are our best testimonials of what you could do with the Front Rank agency. Write today.

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Shipments made from St. Louis, Mo., Lincoln, Nebr., Richmond, Ind., and Pittsburgh, Pa.

FRONT RANK

Warm Air Steel Furnaces.

Mention AMERICAN ARTISAN in your reply—Thank you!

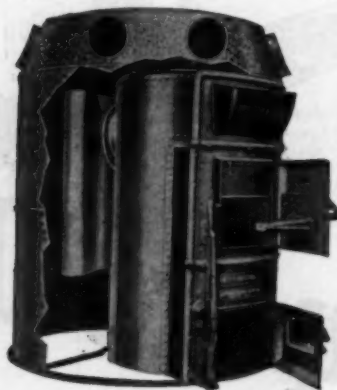
Standard Dealers Know in Advance



9 styles and 47 sizes of steel and cast iron furnaces carried in stock at all times. Nowhere else can you find such a variety to select from.

They are sufficient to meet demands from all classes of trade.

THAT every buyer will become a Booster. The furnaces shown on this page have proven their ability to return dollar for dollar to the consumer in extra service rendered. Standard Dealers are also assured of real profits by our Dealer Plan, which is different.



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R I NO STREAK REGISTERS
H & C No. 170-No. 190 REGISTERS
STAN-CO REGISTERS
STEEL & SEMI STEEL REGISTERS
WISS SNIPS
PEXTO TOOLS



Everything needed by the Furnace Installer

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Warehouse — Sioux City, Ia.

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LONG SERVICE GUARANTEE

PROVIDES RAPID
CIRCULATION OF AIR

EXCEPTIONAL MERIT

ADAPTABILITY TO ANY JOB

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EFFICIENT HUMIDIFIER

INTERCHANGEABLE GRATES



THE FLORAL CITY
MONROE, MICHIGAN

HEATER CO.
1634 Monadnock Bldg., CHICAGO, ILL.

The latest news about the Warm Air Heating Industry is to be found in this Journal every week.

This is the only trade Journal covering this field published every week.

Say you saw it in AMERICAN ARTISAN—Thank you!

Questions Home Owners Ask The "AFCO" Dealer¹ and Their Answers

NO. 2

"Why do 'AFCO' Furnaces Give More Heat with Less Fuel than other Furnaces?"

There are three distinct reasons why "AFCO" Furnaces are the most efficient fuel burners.

1. A greater heating surface. 2. Scientific construction of the radiator controlling fire travel. 3. The specially designed "AFCO" smoke consumer.

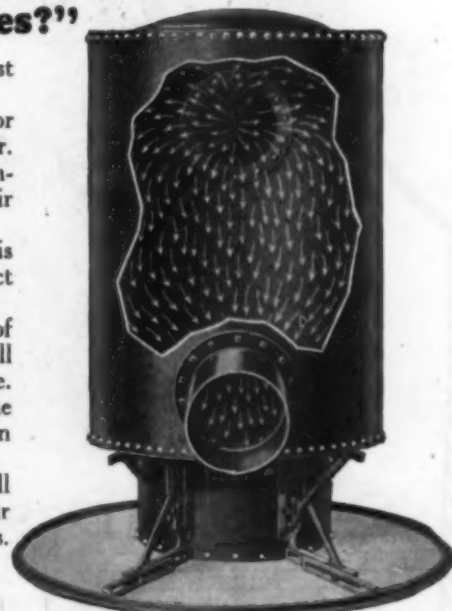
In the "AFCO" furnace the air in the circulating chamber comes in contact with the whole furnace body as it is built on vertical lines. Warmed air always rises in vertical currents.

A furnace built up in sections and having irregular or zig zag surfaces is impracticable because the air in the circulating chamber comes in contact with only the outer edges.

The specially designed radiators on "AFCO" Furnaces are the result of exhaustive experiments and tests conducted over a period of 37 years with all kinds and types of heating equipment. All heat is utilized in heating the home.

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These are only a few of the many important reasons why you can sell "AFCO" Boiler Plate Furnaces and make more money. Send today for our new book "Healthful Heating." It contains many business building ideas.



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on one of the great ships of the **C & B Line** makes a pleasant break in your journey. A good bed in a clean, cool stateroom, a long, sound sleep and an appetizing breakfast in the morning.

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Eastern Standard Time

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Arrive Buffalo— 7:00 A. M. | Arrive Cleveland 7:00 A. M.

*Steamer "CITY OF BUFFALO" arrives 7:30 A. M.

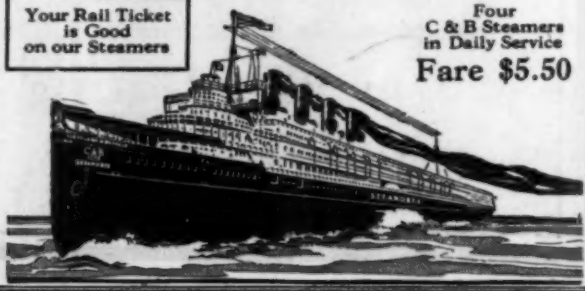
Connections for Niagara Falls, Eastern and Canadian points. Ask your ticket agent or tourist agency for tickets via C & B Line. New Tourist Automobile Rate \$7.50 and up.

Send for free sectional puzzle chart of the Great Ship "SEEANDBEE" and 32-page booklet.

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Your Rail Ticket
is Good
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All Parts Heavy and Correctly Proportioned

Large Combustion Chamber

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One-Piece Floor Ring and Pan

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Are your customers receiving the highest quality and are you receiving a reasonable profit in the competitive field?

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Write today for catalog and prices.

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Liberty Foundry Company
St. Louis, Mo.

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BACKED BY OVER TWENTY-FIVE YEARS' EXPERIENCE IN MAKING GOOD FURNACES

WISE



Quality+Design

WISE furnaces build business because their quality is such that their users can't help bragging about it.

The finest grade of iron plus careful and experienced workmanship guarantee uniform high quality in WISE furnaces.

WISE furnaces are designed for the most efficient as well as the most economical heating results.

We would be pleased to go into the details of the WISE dealer proposition with you and explain why WISE dealers have been making exceptional profits for over twenty-five years.

Write for WISE catalog and dealer sales plans today. •

The WISE trade-mark is known as the symbol of high quality wherever furnaces are talked about.



The WISE FURNACE CO.
AKRON, OHIO

FURNACES

Mention AMERICAN ARTISAN in your reply—Thank you!



RIGHT NOW when the first signs of fall appear and a chilly north wind blows you can get the jump on your competitors by going after sales with quality furnaces.

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Ath-A-Nor furnaces are noted for their high quality, exceptional performance and their fuel economy.

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FURNACE COMPANY**

Newark, Ohio



BOOMER

THIS is our latest addition to the Boomer line. We heartily recommend it for your favorable consideration.

The severe tests we have given this furnace have proven its durability. The unsolicited reports we received from users last winter have been most flattering.

For durability, economy, easy to operate, easy to set up and the low price at which we offer this furnace, you will make no mistake in arranging for the agency.

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Makers of BOOMER FURNACES for Forty-Three Years



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It's Easy to "Get What the Public Wants"

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"Western"
boiler Plate

Furnaces are made of copper-bearing steel, permanently gas tight, economical in operation, practical and efficient, priced to compete with cast iron. Ask for special dealer's proposition.

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Kansas City Furnace Company, Kansas City, Missouri.
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SOUTHEASTERN STATES
Monierief Furnace Co., Atlanta, Ga.
WEST CENTRAL STATES
Standard Furnace & Supply Company, Omaha, Nebraska.
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Pacific Coast Sheet Metal & Furnace Company, 3200 Geary Street, San Francisco, Cal.

Western Steel Products Co.

130 Commonwealth Ave.

Duluth, Minn.



Mention AMERICAN ARTISAN in your reply—Thank you!



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Made of Steel

Guaranteed Exact Measurements and True Circles

Our long years of experience and modern equipment enable us to make these casing rings high grade in every respect and fully guarantee them.

Walworth Casing Rings are made to individual requirements and measurements, full circles for ordinary use and partial circles for full cast fronts. With lugs for Double Casing and without lugs for Single Casing. Write today for descriptive circular and prices.

Made by the makers of Walworth Double Gratings, Semi-Steel Registers, Ventilators, Borders, Side Wall and Base Board Registers

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WASHINGTON HOME FURNACE



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Gray & Dudley Company, Nashville, Tennessee

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FITS ANY
FURNACE

SAVES
FUEL

EASY TO
INSTALL



PUT one on every furnace job—easy to sell and you make good profits. It is economical and will make better satisfied customers.

Write today for full details

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Makers of the ROBINSON
STEEL FURNACES
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Patented CLEVELAND - - - OHIO

"American Seal" FURNACE CEMENT

**Roof Cement — Stove Putty
Plumbers Putty**

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One Hundred Per Cent
*Free Air Capacity without loss of
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YOU never saw a finer piece of Register work—a better balanced job of designing than that found in this register.

This improved model while having the enlarged openings to allow 100% Free Air Capacity, is nevertheless strong and exceptionally neat in appearance.

The Improved STEARNS REGISTER

is the only register made that possesses an operating device that does not rely on springs or tension to be effective. The operating device on the STEARNS REGISTER is very simple and most effective. It is exclusive with the STEARNS and is fully covered by patents.

The Register comes in all the standard sizes and finishes. STEARNS finishes are of the highest quality. All the regular electro-plated finishes can be had and also the popular lacquer finishes such as Brush Brass, Antique Brass and a perfect replica of Oxidized Copper. All lacquer finishes sell on same list price as White Japan.

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of
mechanical perfection"*



THE recent improvements made in furnace pipe construction were started by KWIK-LOK.

You should know that KWIK-LOK originated the spring self-locking device with the longest connecting joint having the inner and outer wall in one continuous piece.

We are always glad to send a sample of KWIK-LOK pipe so you can examine its quality first hand.

Kwik-Lok
FURNACE PIPE
AND FITTINGS

E. C. DUNNING, Inc.
MILWAUKEE
WISCONSIN

THE AIR CAPACITY LINE!

Warm Air Capacity

Convincing comparisons prove the superiority of
**H & C
REGISTERS**

A miniature furnace would not supply enough warm air to heat a ten room house. You'd insist on one of the proper rated capacity.

It is just as important that the registers provide sufficient air capacity as that the furnace provide sufficient warm air. Heat in the furnace, or going up the chimney, will not heat the house. It must be delivered through the register. The register must have **AIR CAPACITY**.

And when you realize that an H & C 8 x 12 register has 81 sq. inches free area, while an ordinary register size 10 x 12, has only 70 sq. inches, there can be no doubt as to the outstanding, most efficient and economical register on the market.

Ordinary 10 x 12 Register
70 sq. inches Air Capacity

H & C 8 x 12 Register
81 sq. inches Air Capacity

It's Air Capacity that Counts

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NEW YORK NEW BRITAIN, CONN.
PHILADELPHIA CHICAGO BOSTON

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FURNACE PIPE
AND FITTINGS

**All
Sizes
and
Shapes**

**Made for Good and Quick
Furnace Installations**

CHICAGO Furnace Pipe and Fittings go together quickly on the job because they are made to fit accurately and stay together perfectly.

It comes in single or double of heavy high grade material in all standard sizes and practical shapes.

Chicago Furnace Pipe and our complete supply service have been the mainstay of thousands of dealers for over twenty years.

Try our service now. Write for Catalog
No. 22 and price list

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Thus, if you entertain any doubt as to their superiority, accept our offer below (free samples of any of our manufactured products). Then compare quality, workmanship, mechanical features and appearance.

That is the fair way of proving our claims to your satisfaction. Above all, that is the way for you to be sure of obtaining good value, and of passing it on to your customers.

THE W. E. LAMNECK COMPANY

416-436 Dublin Ave., Columbus, Ohio

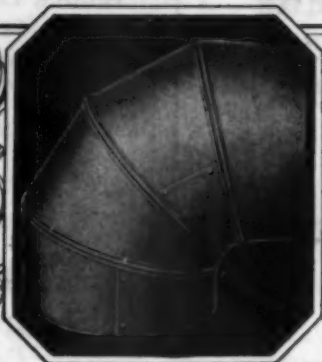
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THE QUICK FURNACE & SUPPLY CO., Des Moines, Iowa

LAMNECK SIMPLIFIED PIPE AND FITTINGS

Lamneck "Self Starter" Adjustable Elbows

The heaviest and best made on the market. They are really and readily adjustable and save time and temper in assembling.



Here Is Our Offer—

We will send free for the asking samples of any of our own manufactured products. Just say the word. Also if you do not have our catalog or discount sheet—write us today.

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is a complete guide to Furnace Dealers and Installers. It pictures and describes and prices "Everything needed in the installation of warm air furnaces."

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anything that can be stamped from metal.
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Prompt deliveries.

May we quote you?

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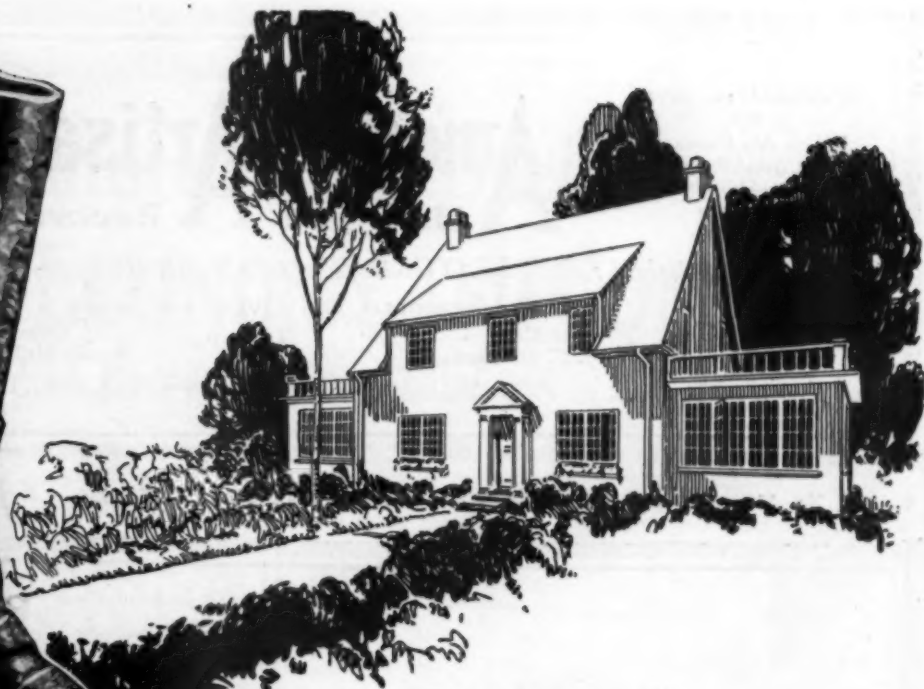
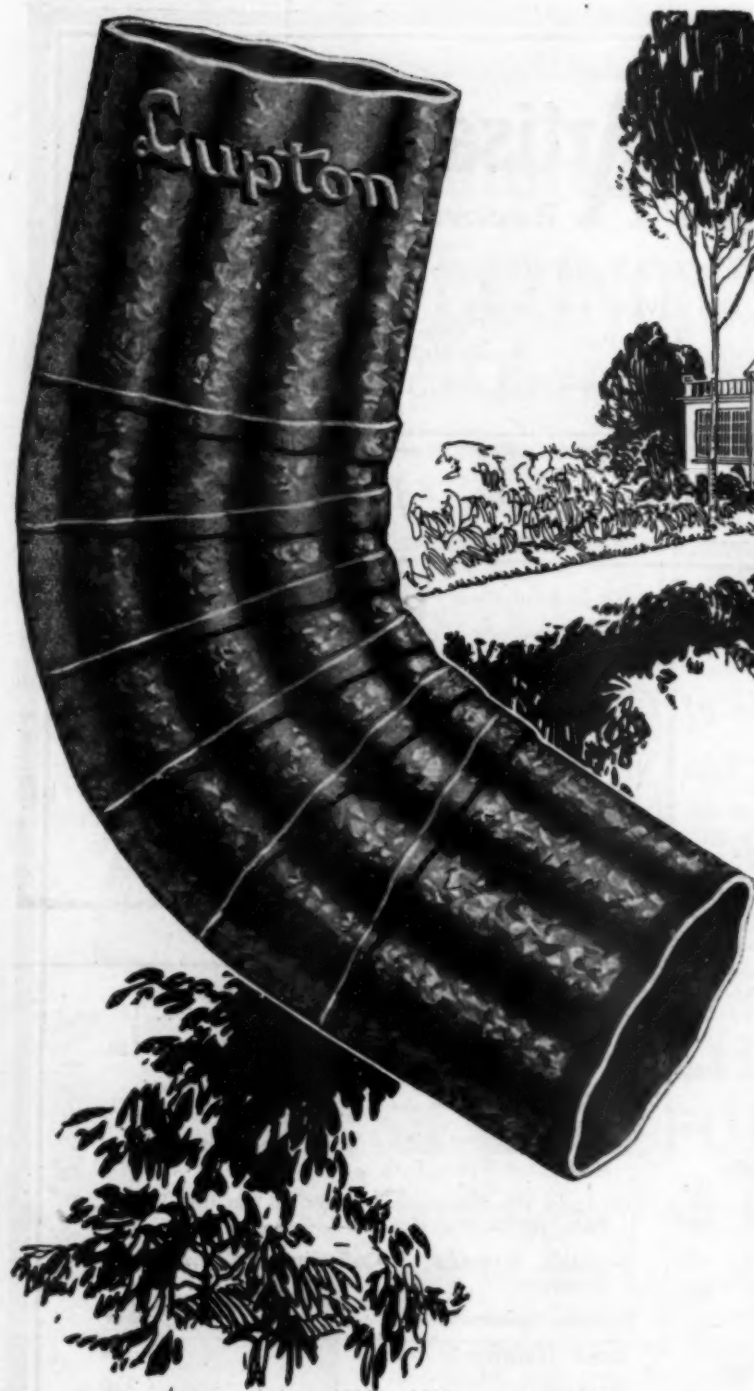
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PERFECT FIT
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Accurate Prompt Service
NORTHWESTERN
STOVE REPAIR CO., CHICAGO
BOILER

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MACHINE BOLTS, LAG BOLTS, NUTS,
COTTER PINS, ETC. ALSO STOVE
RODS, SMALL RIVETS AND HINGE
PINS, CATALOG ON REQUEST.
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FOR STOVES AND HEATERS FIRST-CLASS
IN WOOD and IRON
VEDDER PATTERN WORKS ESTABLISHED
1835 **TROY, N. Y.**

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AND HEATERS**
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CLEVELAND, OHIO

IRON AND WOOD
STOVE PATTERNS
QUINCY PATTERN COMPANY
QUINCY, ILLINOIS



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Lupton Elbows are correctly shaped with a special $2\frac{1}{2}$ inch taper at the lower end which makes a quick, positive joint without solder. Every one is uniform. Tested materials, careful manufacture, and relentless inspection bring Lupton Elbows to your job perfectly formed, clean and easy to use.

Specify them to your Jobber.

DAVID LUPTON'S SONS COMPANY
Allegheny Avenue & Tulip Street
PHILADELPHIA

LUPTON

ELBOWS THAT FIT

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Published to serve
the
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Sheet Metal, Roofing,
Stove and Hardware
Industries

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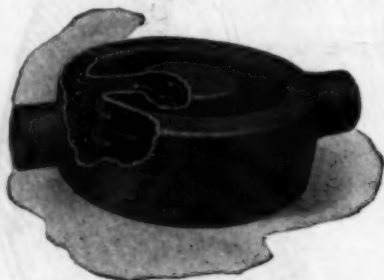
AN ACHIEVEMENT

An explanatory note regarding service to readers of AMERICAN ARTISAN. This paper is now nearing the completion of a half century of service. For almost fifty years it has catered to the needs of the men in the industries which it represents. At no time during its long and successful career has AMERICAN ARTISAN been in a better position to render complete, adequate service to its readers than it is today. In addition to the matter contained in our regular weekly publication, we maintain Service Departments for the use of our readers. If you have a problem to solve, we courteously invite you to submit it to us for solution. In what better way can we learn of your problems than from you direct?

Tell your customers of these

Features That Spell FURNACE ECONOMY AND COMFORT

One-piece Cast Iron Radiator



Causes the hot gases to circulate before passing up the chimney, thus utilizing all their additional heat value.

Anti-Clinker Grate

Furnished with from 4 to 6 triangular grate bars, which operate in pairs, making it easy to free the fire from ashes and clinkers, with no waste of fuel.



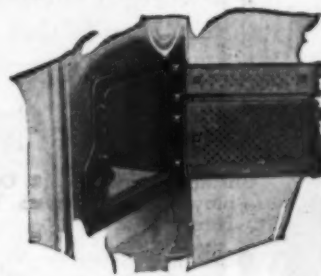
Large Combustion Chamber



Provides ample space for complete combustion, assuring the full value from each pound of coal, and making frequent firing unnecessary.

Convenient, Large Feed Door

—Exceptionally large which, of course, means easier firing. Built in two parts, which may be opened separately or together, affording ready access to all parts of the furnace.



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For Hard Coal, Soft Coal or Wood



THE METEOR has been giving satisfaction to house owners for many years—because of its healthful qualities as well as its economy and ease of operation. Being absolutely air-tight and dust-proof, and supplied with a large, well-placed water pan, the warmed air it furnishes is moist and pure.

Whatever the size and type of house, there is a Thatcher Heater that will exactly suit it, and a Thatcher Range that will be a delight in the kitchen. Mail the coupon for full information regarding our line.

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Gentlemen— Send me information regarding Thatcher Meteor Furnace.

Name..... Address.....

When writing mention AMERICAN ARTISAN—Thank you!



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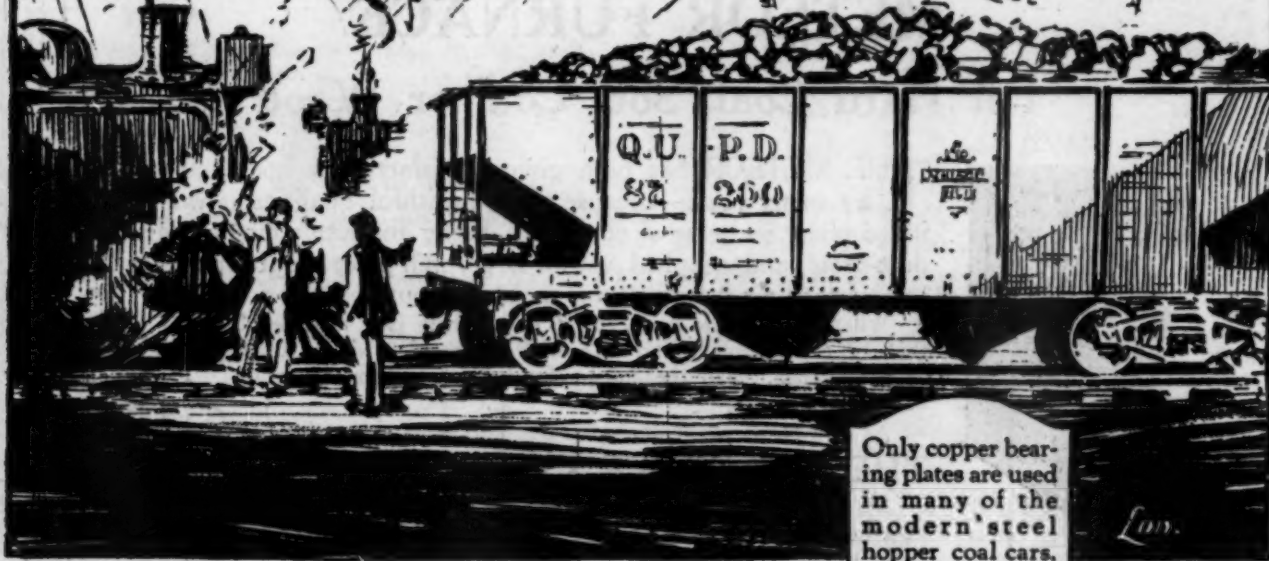
THE added years of extra service assured by the use of copper bearing steel, far outweigh the small additional cost of this rust-defying product. Wherever sheet steel must resist unusual exposure to the elements or other disintegrating forces, specify Nesco Copper Bearing Steel. Look for the Nesco double diamond trademark on every copper bearing sheet and plate you buy. It is backed by rigid tests and actual performance records that assure longer life and care-free service.

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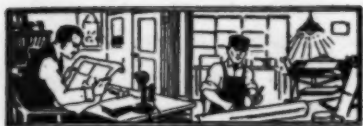
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Cleveland Police Headquarters Building Covered with Sheet Copper Roof by Jacob Halter & Son Sheet Metal Contractors

Copper Roof Now Protects Cleveland Police Headquarters Building

Ornamental Cresting, Door and Window Grilles Are Also Made of Copper

A REVOLUTION is taking place in the type of roofing materials now being employed on the better class buildings. All over the United States we find architects gradually swinging into line and specifying sheet copper, sheet steel and sheet zinc for roofing purposes where a few years ago they would not have given these materials a solitary thought.

The activities of the organizations such as the Copper & Brass Research Association, the Sheet Steel Trade Extension Committee, the American Zinc Institute, the National Association of Sheet Metal Contractors, and, last but not least, the efforts of the individual contractors, are largely responsible for this change of attitude of the architects. These men have been brought

to view sheet metal in its true perspective. They know that materials have been improved. They know that in many instances where failures have occurred in sheet metal of the past, the failures were due to incorrect specification if not to poor application.

Having been assured that good materials are again to be had and men can be employed who know

how to properly apply these materials, the architects are again employing the services of sheet metals.

An outstanding instance of the use of copper for roofing is the Police Headquarters Building, located on Payne Avenue, between 19th and 21st Street, Cleveland, Ohio. This structure, the architect of which is Herman Kregelus, has been recently completed.

The erecting was done by Jacob Halter & Son, sheet metal contractors of Cleveland.

The roof itself was made of 16-ounce soft copper, and the roof type was standing seam, laid upon a concrete slab surface. There were 30,000 pounds of sheet copper used, the cresting also being made of copper.

It is also significant to note that the grill work around the street en-



Showing Copper Grill Work Around Entrance and Windows

trance to the building is made of sheet copper, this being a substitution for the customary cast bronze. This copper lattice and grille work is shown in one of the accompanying photographs.

Attention is also called to the copper police dog ornamentation placed at the upper end of each window.

This copper ornamental work was furnished by Miller & Doing, Inc., 60 York Street, Brooklyn, New York, makers of architectural sheet metal ornaments.

The work was all especially designed for this particular job, and the erecting of the windows were put up by two men at the rate of two windows a day.

Business Grows from One Helper to 16 Employees in Thirteen Years

Proprietor of Lang Sheet Metal Works Takes Great Pride in Work of Sheet Metal Industry

By GEORGE J. DUERR

GREAT oaks from little acorns grow. This is particularly true of the Lang Sheet Metal

John A. Lang decided that it was time for him to strike out into the realm of business for himself. Mr.

mark in the sheet metal industry. Money was as scarce as the proverbial hen's teeth or snake's hips (take your choice).

Like most sheet metal contractors who have made a creditable showing in the industry Mr. Lang necessarily started out in a small way. His shop was small, it being a portion of the dwelling house, as can be seen from a glance at the accompanying photograph.

The force of workers also was small, consisting of Mr. Lang, his office girl and his two helpers—the young boy and the horse—all of whom are shown in the illustration. That was at the outset in 1913, thirteen years ago.

As time went on Mr. Lang made things—chiefly mistakes—by which he profited immensely. The profits that came his way went back into the business of serving folks.

It wasn't so very long before folks about the town of East St. Louis got to know Mr. Lang per-



John A. Lang, His Establishment and Helpers When the Business Was Started Thirteen Years Ago

Works, 1502 State Street, East St. Louis, Illinois.

It was away back in 1913 that

Lang had little then but a lot of valuable experience (to get) and a grim determination to make his

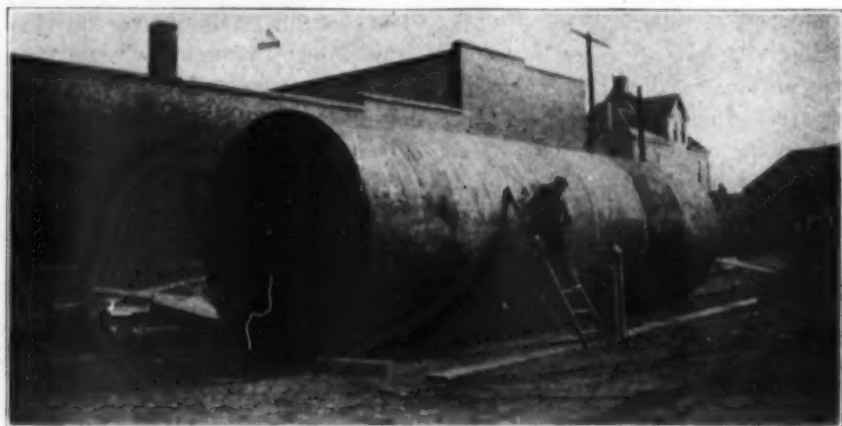
sonally. They had heard from their friends that he was a reliable workman, who always took great pains to satisfy his customers. Whenever a roof needed repairing or the gutters needed renewing, the admonition was always, "see Lang about it. He'll fix you up in good shape in no time."

Then the business began to expand. Mr. Lang, little by little, went from guttering and spouting to cornices and skylights. From there it was only a short step to ventilating systems and furnaces. Now the Lang Sheet Metal Works makes blowpiping a specialty.

As the city grew, so too did Mr. Lang's business expand. Until at the present time he has a force of sixteen men working for him all the

stituted the first heavy iron job that the firm had ever had occasion to work on. These tanks were later

The Lang Sheet Metal Works has long since moved out of the old location, in which it had its humble be-



Showing Type of Work Done by the Lang Sheet Metal Works

transported three miles away from the shop and installed as shown in



Large Tanks Made and Installed by the Lang Sheet Metal Works

year round. This number is an average of more than a man a year added for the thirteen years that he has been in business.

At the present time there is nothing that the Lang Sheet Metal Works does not make. In fact, the slogan of the shop might well be, "if it's made of sheet metal, we can and do make it." About three years ago the firm was called upon to make some tanks. Here was something they had never tackled before. But they were game to try.

The tanks were thirty-six feet four inches long, ten feet in diameter, with three-sixteenths-inch body and one-quarter-inch ends. These tanks had a capacity of 25,000 gallons and weighed 18,000 pounds each. They were made in the Lang Sheet Metal Works' shop and con-

the illustrations. The manholes and couplings were welded on after the tanks were set in place.

ginning. It is now housed in a modern brick structure fully equipped, with plenty of light and air. The two street display windows are always kept clean and attractively decorated.

The old 1-horse wagon has also been replaced by a modern gasoline delivery service, which is a credit to not only the Lang Sheet Metal Works, but to the entire sheet metal industry.

The Lang Sheet Metal Works recently held a summer outing which was planned by Mr. Lang himself for his employees, their wives and children. This outing was attended by over fifty men, women and children, all of whom are supported directly by the business which the Lang Sheet Metal Works does in



Showing Some of the Up-to-Date Equipment of the Lang Sheet Metal Works of Today

and around East St. Louis, Illinois. This is not fiction. It is fact.

What the sheet metal industry needs is not more opportunities, but more men of the calibre of Mr. John A. Lang, who saw a golden opportunity in the sheet metal industry and had the courage to grasp it and the tenacity and sincerity of purpose to work it out. Now things

are coming his way.

Mr. Lang must feel very proud of his achievement. He must derive an immense satisfaction, when he sees this group of over fifty happy people, in the knowledge that it was due to his ambition, to his foresight, to his desire and yearning to be of service to mankind in the best way he could that these people are

growing up and becoming responsible and creditable citizens of the community in which they live and develop.

Let us repeat. What the sheet metal industry needs is more men of the calibre of Mr. John A. Lang, founder and proprietor of the Lang Sheet Metal Works, of East St. Louis, Illinois.

Describing Scientific Method of Making Pattern for Diagonal Branch Connection

This Formula Can Be Used Where an Elbow Is Brought Out from the Main Pipe

By O. W. KOTHE, Principal St. Louis Technical Institute, St. Louis, Missouri

RECENTLY a job came to my attention where an elbow was brought out from a main pipe, similar to that shown in the plan, and a 45-degree angle to the run on the main pipe. Most men make short work of this problem by using a separate collar and simply setting the elbow on, shifting it to the position they desire before fastening it rigidly to the collar. But workmen who desire a little more science to their designs and also to overcome riveting an extra joint, will find the geometry in this drawing quite helpful.

Here we have the main pipe indicated by section "A." The branch sides are indicated by section "B." Then the line W-Z shows where the elbow is to start, and the top of the turn is to be done in the space Z-U. We have broken the collar in the line V so as not to confuse the student while working out the twist. But if we develop the elbow in 4 parts and run the lines from section "B" to the first miter Z-a, we have all the working drawing we need. Thus mentally we can imagine the diagram "D" where the line x-y shows the revolution of 45 degrees that the throat of the elbow must turn over from the heel of the collar, or vice versa.

We develop the collar by picking the girth from section "B" and projecting it from points 1'-2-3-4. This

gives the outline for collar. But on the center line we must make the twist and so we work over one-eighth the circumference or the distance x-y from "D," which is set as x'-y', and then from 4 we again step off the circumference the same as we did for the collar, only drawing new lines from newly established points. With dividers we pick the seam line 4-4' from the elevation and this enables us to continue the development until the elbow is finished. In this way we see what falls off one end is added on to the next or by simply drawing the line straight through from the end of collar we cut off elbow as it should be.

In practice it is possible to do

this much more simply, because one of the gore pieces of the elbow must be laid out, and so all that is needed is to take the end gore and draw the line 4-4' in its proper position, shifting it up the distance x'-y' and scribing the line with miter. This will give the development, as well as doing it separately. Should the opening be desired from the end elevation we see distant 1'-1" of "A" must be cut out in order to give full area to the collar. This is done by picking the spaces 1'-2-3-4 from "A" and setting it as we show in the pattern for opening. Then by picking half diameters from section "B" and stepping them on each side of center line, we have the pattern for opening.

Fire Prevention Week Brings Sheet Metal Into the Limelight

Here's How the Contractor Can Take Advantage of Public Interest

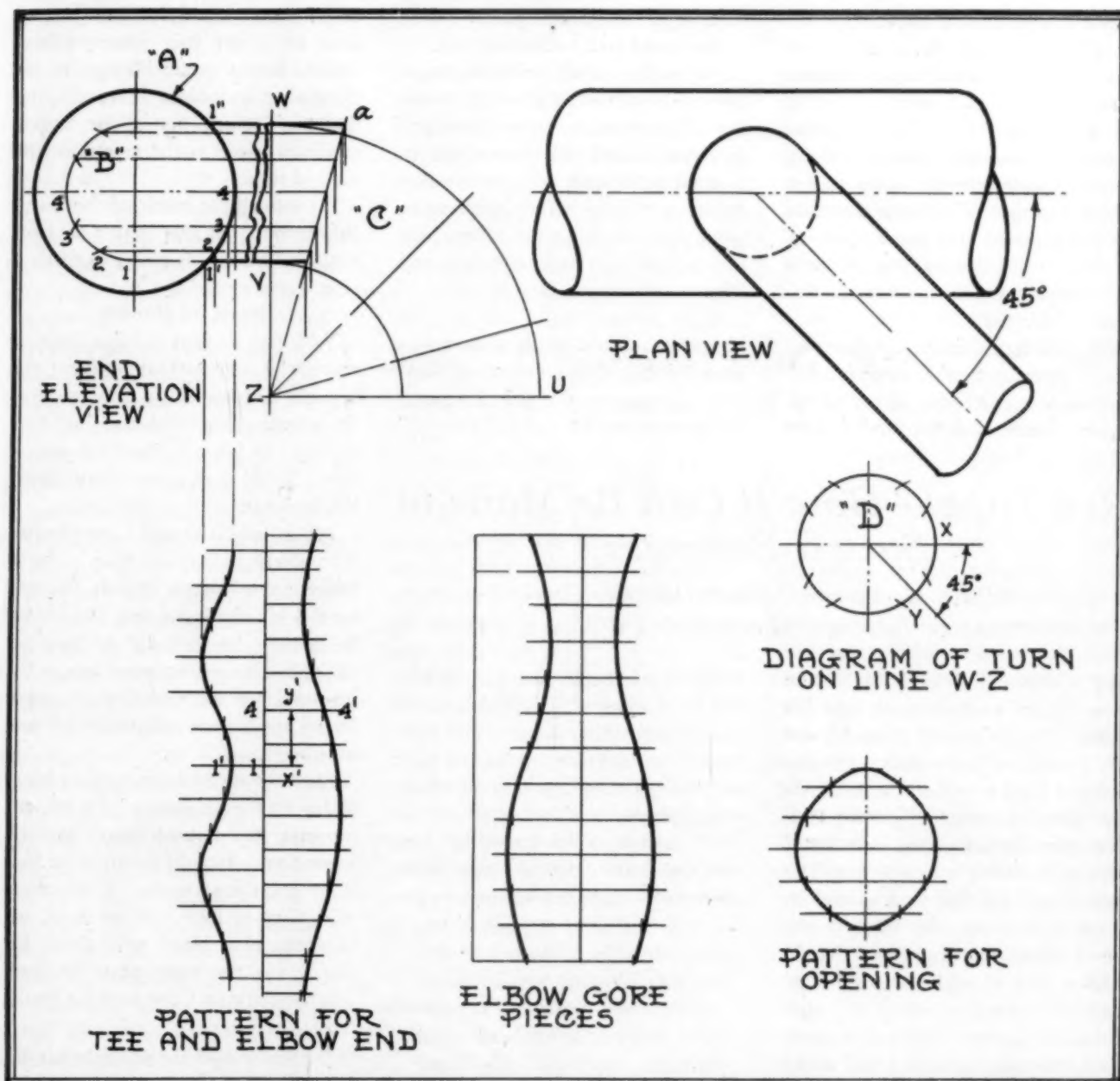
A VAST number of sheet metal contractors are at the present time wondering how they can make the most of the oncoming anniversary of fire prevention week.

The Ingot Iron Shop News for September contains a very expressive editorial entitled "Strike While the Iron Is Hot" which can be read with a great deal of profit by every

sheet metal contractor. The editorial runs as follows:

"Fire prevention week is here again. Thousands of people living today owe their lives and their millions of dollars worth of property to the influence of last year's fire prevention drive.

"Yet, in spite of it all, from 15,000 to 17,000 of our countrymen



Pattern for Diagonal Branch Connection

burned to death the past year; more than \$500,000,000 property damage was caused by fire in the United States alone, during that period.

"Every week, in this country, 1600 dwellings, 3 theaters, 3 public buildings, 12 churches, 150 apartment buildings, 2 hospitals, 26 hotels, 2 college buildings, 3 apartment stores, 2 asylums, and 2 jails go up in smoke.

"All this is due to carelessness or to the use of inflammable building materials.

"It makes us wonder why so much inflammable material is used, and especially when we consider

that timber is scarce and growing scarcer. Even out in the virgin forests, before man had a chance to make use of it, the 20,000 forest fires last year laid waste to millions of fine trees. Add to this the tremendous inroads of commerce upon the lumber supply.

"Lightning is another kindred agent of destruction. Where lightning strikes there's usually a fire. Sheet metal is the one building material that gives maximum protection from both fire and lightning and yet is economical and practical for construction use.

"Thus for several good reasons.

the world is turning to sheet metal as the safe and 'saving' way out.

"The farmer and the industrial manager, particularly, are interested in sheet metal; the farmer, because he has no fire department to protect his property; and the industrial plant manager because his buildings are large and involve such a tremendous investment. Both are large potential users of sheet metal.

"Each year the interest in sheet metal is stimulated by fire-prevention drives, while always in the background, looming larger and larger, as time goes on, is that urge of economy. Now the metal-framed

house is adding new impetus.

"Fortunately, all this combines in the interest of sheet metal contractors.

"What better time for a concentrated, nation-wide drive for sheet metal construction? The sheet metal contractors' efforts can ride on the crest of this great wave of fire-prevention propaganda that will be sweeping the entire country the week of October 3-9.

"A few suggestions: window displays, signs on trucks, signs outside the shop, special job signs, newspaper, theater program and theater

slide advertising, and special letters to prospects and past customers.

"Then, if you are really making a conscientious visible effort at boosting fire-prevention, go to your local newspapers and tell them about it. A good newspaper will always recognize a worthy effort, with news publicity. Round your efforts out in the form of a real campaign, and then let the newspapers in on it.

"This is especially true of the activities of sheet metal contractors associations. What a group of local business men are doing in a general welfare movement, is always news."

Red Tape!—How It Can Be Made to Save a Business

What a Young Sheet Metal Contractor Learned About Being a Worm

"I'M through," said big Mike Phelan as he strode into his house. "I don't mind doing a good day's work. There ain't any man can say I ever shirked or didn't do my work satisfactorily. Besides, I've always stood by the boss, but I can't go on being a tape worm. The way they've got that firm wound up in red tape, now, you'd think it was the United States mint. You'd think a stick of solder was a bar of gold, the way they make you sign for it and the way they watch every drop you use. I don't mind doing my share of work, but no man's going to make a tape worm of me. I'll just go into business for myself and not be tangled up in red tape all the rest of my life."

Mike sure was all stirred up. He'd got it into his head it was a reflection on his honesty or his ability or that it was bringing disgrace upon him in some other way to have his work and the material he used watched in the way it was being watched. He even resented the time cards he was required to fill out.

It hadn't always been thus. Back in the old days when Mike first went to work for the firm things went

along in a free and easy way and he had been happy. Now it seemed as though everything possible had been done to irritate him. It had all happened since they'd got in that new management.

Of course, Mike knew, in fact everyone knew, that the new man-

The author of this article has very effectively portrayed the attitude of many a sheet metal mechanic—a potential or embryo contractor—toward good business methods. He fears them because he does not understand them. They are irksome to him because they appear to restrict his activities. In republishing this article of Mr. Bullard, we hope that some sheet metal mechanic will be led to see the fallacy of reasoning such as that employed by Mike Phelan.

agement was the direct result of the concern having come so close to bankruptcy. He knew that the only the boss alone for a little while he'd have pulled through. Now they're strangling the business with red tape and will kill it anyway. Besides they're making tape worms of us all

and I won't stand for it. Just as soon as I get that money from Uncle Phenas' estate I'll start in for thing that had saved it was having that big jobbing house, the largest creditors came to the rescue in the nick of time.

"It was all the result of the war," he'd insist. "If they'd just have let myself. No man's going to make a tape worm out of me."

Starts for Himself

Well just as soon as Mike got that money he did start in business for himself and his was a happy, care-free, easy-going business, just like those he'd known when he was a boy. There was no red-tape about his business.

Mike was a good workman. Everybody admitted that. He'd made a good many friends because he did his work so well and when he set up for himself he had no difficulty in getting contracts. To be sure, they were small ones, but a lot of small ones will make a business large.

Starting out to do everything himself with the assistance of a helper, he soon found it necessary to hire more men. In a little while he had quite a force at work. Every man was a good man. Mike took no chances. He hired only those he knew, for the most part he had worked with and the men he could trust.

By the end of the second year he had gone as far as he could with the capital at his command and had been advised to go to the bank to see if he could not get additional money there, but the result was far from satisfactory. The banker did not seem to like his business methods.

"You do not seem to be familiar enough with your own business to warrant us in making a loan to you except on the very best collateral," the banker had told him. "Now if you would bring in a balance sheet every month so we could see exactly where you stand and whether or not you are making the money you seem to think you are making, we might be a little more liberal."

"More of that red tape business," grumbled Mike when he was back

Reprinted from the August number of the *National Sheet Metal Contractor* and was written by J. E. Bullard.

on the sidewalk again. "These birds make me sick. You'd think to hear 'em talk a man couldn't do business unless he spent half his time fussing around with figures and tangling himself up with red tape. But I'll show 'em."

Business Volume Shrinks

And he did. By the end of the third year his business had shrunk simply because he could not raise enough money to pay as large a force of men as he needed. There was a good deal of grumbling among his customers because he was so slow in getting jobs done and it was getting harder and harder to get business. Worst of all, though, he actually didn't have as much money as he started with when he set up in business for himself.

This puzzled Mike a good deal. He'd had enough experience so he could tell by looking at a job just how much material and time would be required to complete it. He had done work at prices that should have shown a profit, but somehow there hadn't been any profit.

Then came the climax. One evening Mike was sitting in his kitchen counting up his cash and wondering how he'd raise enough to pay the men next pay day, when Timothy Jones came in. It's making the feeling of welcome, Mike felt far too exuberant to say that he'd a lot rather have seen the Devil at that moment than Jones. Yet Jones had been a good friend to Mike. He'd been liberal in extending credit and had helped Mike out in many ways. The trouble was that Mike was a long way behind on what he owed Jones, couldn't pay him anything now and couldn't see how he'd raise enough to pay his men. It looked as though he'd have to lay off some of them, though he had plenty of work to keep them busy.

More Red Tape

"Mike," said Jones as he surmized how the land lay, "you're one damn fool. You've been working your head off for three years and losing money all the time. No. You don't need to try to explain. I've been watching you. You just keep your mouth shut and listen to me or

out of business you go. If I bring suit for what you owe me you won't have a cent left. I'm willing to be reasonable, though, because I believe you've got a business started that can be made into a real business, but you've got to do as I say."

Mike didn't like this kind of talk, but what could he do? He surely wasn't a tape worm any longer, but he owed so much he wasn't any more independent than an earth worm. If he didn't squirm in the right direction some one of his creditors would step on him and crush the life out of him and Mike had sense enough to know this. He also thought if he was given the time he could find a way out of the fix he was in. He was now squirming for time and was standing for something he'd never stand for without fighting if he hadn't been in such a fix.

"Mike," Jones continued, "you're wasting altogether too much material. You ought to be making a profit on the work you're doing. You're getting good prices for it and you're doing it well enough so your customers are satisfied, but you're just throwing your profits away. You're making a blame fool of yourself."

This was getting too much for Mike. His face got red and he started to get up from his chair.

"Shut up and sit down and listen to me," shouted Jones. "I know what I'm talking about. I've been watching you pretty close lately. Here's a list of some of the stuff you've just thrown away. You've left a tool here, some material left over there. What I have here totals up to at least five hundred dollars. You've probably been throwing away two or three times that amount in the course of a year, and just because you're either too big a fool to keep track of all time and material or just too cussed ignorant or pig headed."

"Now I'll tell you what you've got to do. I'm going to send a young fellow around from the office tomorrow and he's going to keep track of everything you use, of every bit of material that goes into every job,

and make certain that no more material goes out to each job than is necessary and that every bit of material left over comes back. He is going to watch every tool and he's going to check up the time of every man and see to it that the cost of every job is known. If you estimate too low you're going to hear about it when the job is over."

Well Mike really could not do much about it. The very thing had happened to him that had happened to his old boss. It was a case of going back and being the tape worm again. That is until some way could be found to pay Jones what was owed him.

Untangled

The records of those first jobs sure were an eye-opener to Mike. Every man, including himself, had got careless because no records had ever been kept. Some left-over material that could just as well have been used on some other job had not been brought to the shop. There were some tools missing. The whole thing totaled up in value to a sizeable amount. Besides, when the time was checked up it was apparent that the men had not worked any too hard. After that Mike got busy. This carelessness soon stopped and in a month every job was showing a profit.

Yet all this red tape with which his business was now entangled irked Mike. To him any records, any system was red tape. He would have liked to do business without it. It did not seem necessary. Yet without it he had lost money.

"Oh, well," he sighed as he wrote the check that balanced his account with Jones. "It looks as though we all had to be worms to make a living in this world. You've got to be a grub worm and work your darndest to get enough to eat; you've got to be an earth worm and keep squirming around to keep from getting under feet, or you've got to be a tape worm. The tape worm seems to have the best of it. He doesn't work so hard for what he gets as the others do and he lives a whole lot better. I've got now where I could be any kind of a worm I want."

What Is an Average Overhead Rate in Shop of 10 to 20 Men?

Would an Average Overhead Rate, if Known, Be of Any Material Value?

"HAVE you any statistics on the average overhead of sheet metal shops hiring from 10 to 20 men?" asks Bartholomew & Company, Michigan City, Indiana.

In the first place, is there such an average overhead rate? Presumably there is. If we were to classify all the sheet metal contractors in any given state into three distinct groups, we could no doubt, arrive at an average overhead rate in each one of these groups, providing that each and every sheet metal contractor kept an accurate account of his costs, and did not object to cooperating with us.

But after we have obtained this information in what way could any sheet metal contractor use it. Such an average could not possibly be a guide to him in his own business, because it would not be representative. There are so many factors entering the determination of an overhead rate that a rate in one city, no matter how accurate, would not apply in a shop in a neighboring city.

W. B. Walker of the Comfort Printing Specialty Company, 107 North Eighth Street, St. Louis, Missouri, has the following comment to make on the inquiry:

"No one, to our knowledge, has ever seen enough of the costs of sheet metal shops, hiring from 10 to 20 men, to say what the average rate of overhead really is, because there are so many shops of this nature who keep no cost records.

"It is a fact that a sheet metal shop hiring twenty men should be able to show a much better overhead ratio than one hiring ten. Assuming that the sheet metal shop is not a manufacturing shop, but a contracting shop, our experience would lead us to believe that the average one would have an overhead rate per man per hour of an amount approximately equal to their labor charge. If they were in a

town where labor is cheaper than it is in St. Louis, my guess would be that their overhead rate per man per hour would be from 75 to 80 cents. Some shops are very efficient and get a much better rate than this; others have so much idle labor that their rate would be a great deal higher.

"In the sheet metal industry the control of idle hours of labor is a much more important feature than in other lines of industry, and the overhead rate more or less fluctuates in the same ratio as this expense is controlled.

"We suggest that it makes little difference what the average overhead is, in the sheet metal shops to the man who makes the inquiry. What he ought to do is find out what his own is, and if possible compare it to that of his immediate competitors. That is the only thing that means dollars and cents to him; for what difference does it make to him what overhead rates shops in St. Louis meet with if he is in another town and not affected by St. Louis competition?"

Cook County Sheet Metal Club to Study Technical Phases of Work

The Cook County Sheet Metal Club is getting back into its regular stride of activity again as the cooler weather approaches.

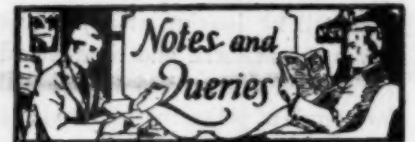
At a meeting of the association held in the club rooms in the Immel Bank Building, Belmont and Elston Avenues, Chicago, Friday evening, September 17, a plan of constructive activity was outlined.

Among many other matters of a constructive nature which the association hopes to take up during the coming winter is a plan of education which it is hoped will prove of great benefit to those members who are somewhat backward in one

or more of the technical phases of the industry.

Beginning with the next meeting, which will be held Friday, October 1, it is planned to give over some of the time during the meeting to the technical phases of the work which each and every member comes in contact with during his every day work. Men in the association who are considered experts in their various lines will give blackboard lectures in warm air heating, guttering, downspouting, roofing, estimating and other phases of the work.

From time to time it is planned to have technical men from outside of the industry speak to the assembly. In this way it is hoped to carry out to a greater extent than ever during the coming year the work for which the association was formed.



"Continental" Oil Burner.

From Quaker Manufacturing Company, Oak Park, Illinois.

Can you tell us who makes the "Continental" oil burner formerly made by the Continental Oil Burner Company?

Ans.—Ft. Wayne Pump and Tank Company, Ft. Wayne, Indiana.

"Potter" Fire Escapes.

From Kuetzer Brothers, Gillespie, Illinois.

Please tell us who makes the "Potter" fire escapes.

Ans.—Potter Manufacturing Corporation, 111 West Washington Street, Chicago, Illinois.

"Mohawk" Shot Gun.

From Julius Rieth, Lansing, Iowa.

Can you tell me who manufactures the "Mohawk" shotgun? It has the letters "B. M. and S. H. Co." on it.

Ans.—Blish, Mizè and Silliman Hardware Company, Atchison, Kansas.

"Hotstream" Heater.

From Stove Dealers Supply Company, Milwaukee, Wisconsin.

We should like to know who makes the "Hotstream" heater.

Ans.—Hotstream Heater Company, Cleveland, Ohio.

The Editor's Page

Contributing to the Uplift of the Industry

BEGINNING with its next meeting the Cook County Sheet Metal Club of Chicago tends to devote a portion of each meeting to constructive education. Black board lectures will be given by specialists in each phase of the industry with which the membership is concerned. Technicians from outside the membership of the organization will also be invited to give the members the benefits of their experience from time to time as well. In this way a member finding himself weak in any particular phase of his daily work can receive instruction from his fellow members whose knowledge of the work is greater than his own.

Industry has, indeed, traveled a long way. Today we find competitors who a few years ago would barely speak to one another coming together of an evening to help one another learn more about the business of which they are a part. We can indeed look for better things when we find that coöperation has reached such a state of development.

The Cook County Sheet Metal Club and all other similar bodies of contractors deserve a great deal of credit for their intense desire to build for permanence. With a display of such coöperative spirit we know that the interests of the public will be well taken care of, even though that same public may be called upon to pay a little more for its work.

In analyzing an increase in cost to the consumer which may possibly be traceable to the formation of an association, we cannot in fairness to the members of the association say that they have deliberately increased their prices. That would not be true.

What the association has taught them, on the other hand, is that they were not getting a fair return on their investment all the while that they were attempting to go it alone. In other words, before the advent of the association the public was getting its work done too cheaply, with the result that poor workmanship and inferior materials were introduced whenever and wherever it was at all possible for the contractor to get away with it, without being found out.

If the association has done anything at all it has taught the contractor that unless he can collect enough for his work over and above the cost of high-grade materials to pay his salaries and to give him a fair return on the money and time that he himself has invested it does not pay him to spend his time in that way or in this business.

The trade association has been instrumental in showing the contractor what that figure in his business is. It has helped him to introduce cost accounting systems that tell him what figure he must get for his work before he makes an agreement to do the work. In other words

they have helped him to take the guess work out of his contracting business and have put him on his feet, so to speak.

The members of the Cook County Sheet Metal Club will do well to arrange their affairs so that they can attend each and everyone of the meetings of the club during the coming fall and winter. They will be richly rewarded for the time they give. This holds true of the members of all other sheet metal and warm air furnace associations—local, state and national, throughout the entire country.

Blazing the Trail in Warm Air Heating

WHITHER is the warm air heating industry headed? asks R. W. Menk in our issue of September 18, 1926.

Mr. Menk evidently doubts that the foundations that are being laid for the warm air heating industry now are broad enough to carry the superstructure that is to come later.

What is causing all these doubts and misgivings to spring up in the mind of Mr. Menk is the fact, in his opinion, that men in the business—makers, salesmen and installers—are not yet themselves thoroughly sold on the idea that a warm air heating system is the best for the average home.

If the warm air furnace industry is to be allowed to expand and develop to its fullest limits, a great many men in the industry will have to revise their ideas about the capabilities of the warm air heating system.

There can be no stopping at the average home. The slogan must include all residences. Is there any logical reason why this cannot be done? We think not. There are few, if any, warm air furnace manufacturers who would care to admit openly that the system they make could not be so installed as to meet the needs of any residence, granting that a furnace of proper size is used. Great is the surprise then when it is learned that these same men are secretly turning down residence heating jobs which come within the pale of possibility for the warm air heating system.

If schools and churches with high ceilings can be satisfactorily heated with warm air—and this type building is being heated with system—then why should the larger than average resident present an insurmountable problem to the warm air heating engineer?

Competitors of the warm air heating system are ever watchful for a chance to belittle the possibilities of this system. Why extend handles for them to grasp in their nefarious work?

Let's become so thoroughly sold on our product that our enthusiasm will at least allow our system to meet the customer on an equal footing with our competitor.

Random Notes and Sketches

By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

I received a telegram from John P. Wagner one day this week. Mr. Wagner was formerly identified with the manufacturing end of the warm air furnace business. Quite recently, however, he assumed the executive management of the Concrete Products Manufacturing Corporation, with offices in the Ralston Building, Miami, Florida. Mr. Wagner stated in his telegram that he and his family were all alive and well. I certainly appreciate Mr. Wagner's thoughtfulness in sending me the news about his family, as my thoughts turned to him immediately upon learning of the disaster which struck Miami. The telegram also contained the words, "total loss by storm," but I did not know what interpretation to place upon them. I sincerely hope that he did not mean that his personal property was a total loss.

* * *

Can you imagine this happening to any traveling man. Before A. R. Gibbs became associated with the Casper Tin Plate Company for whom he is now traveling, he visited a small town and sold the proprietor of the store some of his firm's products. When goods arrived they were not as represented, and the merchant returned them. The company drew a sight draft on the merchant through a local bank, which returned the draft unhonored. The company wrote the postmaster about the financial standing of the merchant, and the postmaster laconically replied with an O. K. By return mail the company requested the postmaster to secure a lawyer to collect the amount, and received the following reply:

"The undersigned is the merchant on whom you attempted to palm off your worthless goods. The undersigned is the President and owner of the bank to which you sent your sight draft. The undersigned is the postmaster to whom you wrote, and

the undersigned is the lawyer whose services you sought to obtain for your nefarious business. If the undersigned were not also the preacher of the church of this place, he would tell you to go to H—."

* * *

Mrs. H. O. McElwain, of South Bend, Indiana, is very much interested in protecting the health of her spouse, who, of course, you know, sells Torrid zone furnaces for the Lennox Furnace Company, through Indiana and Michigan. She was trying to break him of the smoking habit.

"Look here," she said one evening as they sat together in their comfortable living room, and pointing to a newspaper, "it says here that smoking is very harmful."

"What rot," said H. O. "Do I look ill? I'm thirty-eight and as strong as a horse."

"Yes," she said, "but if you hadn't smoked so much you might have been sixty by now."

* * *

Every once in a while a fellow gets into one of those embarrassing situations where it is impossible to say whether what the other fellow says is a promise or a threat.

R. H. Guenther, of the Accurate Sheet Metal Works, Chicago, and president of the Cook County Sheet Metal Club, "met up" with one of those peculiar situations the other day.

It happened this way. Mr. Guenther was in church. The minister had just preached his farewell sermon to the congregation, with whom he had had much trouble. Mr. Guenther wanted to be polite and said to one of the visiting deacons: "How beautiful! And how appropriate for a farewell sermon!"

"Think so?" said the deacon gruffly.

"Why, yes," said Mr. Guenther. "What better text could he find than 'In my Father's house are many

mansions . . . I go to prepare a place for you?' By the way, where is he going?"

The deacon smiled sourly as he answered: "He becomes chaplain of the State penitentiary."

* * *

I had a visit from Tom W. Pearson, of Thomas & Armstrong Company, London, Ohio, on Tuesday of this week. Tom, you know, is the witty gentleman who made the report on the Search and Seizure Committee containing recommendations and admonitions at the Urbana meeting of the National Warm Air Heating and Ventilating Association last December. Tom told me on the Q T that that committee of which he is chairman had been very active during the past year and that he hopes to be able to make a very impressive report at Urbana this year. I tried to learn what form of attack will take this year so that I could tip my friends among the furnace manufacturers off, but I found Tom entirely non-committal. He assured me, however, that the report he makes will be up to his usual high standard. The vacation season has dealt kindly with Tom, as he appeared to be in the best of health.

* * *

I learned this week that Ralph W. Blanchard, Chicago branch manager and secretary of Hart & Cooley Company, New Britain, Connecticut, was taking a vacation. My information was derived from no less an authority than James Charles Allen of the International Heater Company. My friend, James Charles, says that Ralph had gone away for a change and rest. How he found this out I haven't the slightest idea, unless it could be that Ralph had gone to Rockford for a rest, and in that event I can easily see who got the change. I was somewhat surprised though to learn that Ralph had found it necessary to take a vacation. He travels around so much, anyway, that it would seem he got plenty of both change and rest and all of the other things that one usually gets on a vacation without actually taking one.

St. Louis Heating Company Stages Booth at Greater Exposition

Company Gives Away Free Complete Furnace Installation to Holder of Lucky Number

THERE are very few warm air furnace installers who are not yet convinced of the efficacy of the county fair booth to get results. Most energetic installers have long since recognized the county fair as an important ally, and many a live prospect list has been worked up from this source.

Now comes the Greater St. Louis Exposition—September 4 to 19, 1926—celebrating 150 years of American independence and industrial progress. And with it we also see the warm air furnace installer taking advantage of this opportunity to get his products before a potential public.

In the accompanying illustrations we show how the St. Louis Heating Company, 2901-11 Elliot Avenue, St. Louis, has staged its booth at the exposition.

Mr. Valentine A. Fath, who has charge of the exhibit, describes the public's reaction to this display of warm air heating apparatus as follows:

"Photograph No. 1 shows a No. 448 Home Comfort soot and gas consuming furnace set up for demonstrating purposes. It is fired with Illinois soft coal of an ordinary tuck grade." The smokestack is twenty feet high and open at the top. The warm air pipes distributed

as shown number six in all, namely, one 8-inch, two 9-inch, two 10-inch, one 12-inch, making a total of 445 inches. These ducts are connected to a 32-inch round stack, which has a bottom in it. This stack is fifteen inches above the canopy and passes through the roof and connects to the roof ventilator. The warm air pipes are taken off the side of the canopy and spaced around in proportion to the size of the pipes. These warm air ducts are also neatly and smoothly covered with asbestos paper.

"The cold air shoe is placed directly on the rear of the furnace for uniform distribution. The shoe is 12 inches high, 38 inches wide—a



Photograph No. 1 Showing the Booth of the St. Louis Heating Company at Greater St. Louis Exposition, Held from September 4 to 19

total of 456 inches. It has two collars, one 14 inches, equaling 154 inches, and the other 20 inches, equaling 314 inches, or a grand total of 468 square inches.

"The water pan is placed in the center of the upper section of the furnace, where it heats and evaporates water quickly and is in plain sight to the prospective customer.

"On the left side an opening is cut into the casing fifteen inches in diameter, which is conveniently lo-

they are. What's that big pipe for above the furnace?"

"When people stop and ask questions, that fact alone proves that they are interested, and by showing them how to fire a furnace and how it functions the display man can work up a great deal more interest. This proves a great drawing card.

"On the left side of the booth is located a No. 051 double door gas and soot consuming furnace. This furnace is equipped with a cut-

from the coal, how to avoid clinkers and how to make less smoke.

A complete furnace installation was given away free by the St. Louis Heating Company on this occasion. The contest was conducted in this way: A card having a number and containing full information about the furnace installation to be given away free was circulated among the home owners. This card or coupon was equipped with a detachable slip, having a duplicate number to the one on the main coupon and also a space ruled out for the name, address, telephone number and location at which the furnace is to be installed in the event that that number is the lucky one. The condition is that the holder of the coupon must present himself at the booth in order for the entry to become valid.

Of course, the list of live prospects for furnace installations that is obtained in this way is of inestimable value to the company. The individual presenting himself at the booth also gives the man in charge of the booth an opportunity to explain the advantages of the warm air heating system.

Stressing Importance of National Fire Prevention Week

In his proclamation designating Fire Prevention Week last year, President Coolidge referred to fire loss as a waste resulting "from conditions which justify a sense of shame and horror for the greater part of it could and ought to be prevented." In 1905 the value of the property destroyed by fire in the United States was \$165,000,000. Ten years later in 1915 there had been no appreciable increase, the figure being \$172,000,000. But from that time a larger loss has been reported every year than during the preceding one until the stupendous total of \$570,000,000 was reached in 1925, and unless there is a marked improvement during the remaining months of 1926, indications point to an even greater loss this year.

Woodrow Wilson began the custom of designating October 9 the an-



Photograph No. 2 Shows a Group of Interested Spectators Watching a Furnace Demonstration

cated so that the prospect can inspect the furnace and feel of its heat.

"This furnace display has aroused a great deal of curiosity. Many visitors to the exposition stop and peer into the booth. They attempt to figure out the curiously shaped furnace, make many comments among themselves and then finally break out in a rapid running fire of questions.

"Here are some of them: 'Is that a new way of piping a furnace? Is that a pipeless furnace? Is that a new style way of heating? Gee, that's a dandy furnace, because you can't bump your head on those pipes while shoveling coal! I'll beat that those pipes heat easy; see how short

away casing so that the furnace itself can be seen readily.

"On the shelves out in plain view are specimen fire brick and grate bars. Seats are also provided in the booth for the interested prospects.

"Photograph No. 2 is that of a group of interested spectators who were "caught" before the booth by the camera man as they were listening to Mr. Fath's 'line.'"

The evidence shows that they were vitally interested in what Mr. Fath had to say, because no one of them had the slightest inkling that a picture was being taken. To be more exact, Mr. Fath was, at the moment of taking the picture, in the act of telling his audience how to save fuel, how to get the most heat

niversary of the great Chicago fire, as Fire Prevention Day for the purpose of impressing upon the entire nation through appropriate activities the importance of curtailing this excessive waste. Subsequently, the entire week in which October 9 falls was set aside annually instead of a single day.

Fire Prevention Week is to be held throughout the nation this year

from October 3 to 9. It is expected that the activities carried on will be more extensive and diversified than ever before in order that the public may fully realize the serious extent of the nation's fire waste and be instructed in methods whereby it can be decreased. It is suggested as the starting point for continuous activities throughout the year. Take this to heart.

Tri-Art Printing Company, of Grand Rapids, and Ralph Ettlinger, of the Ettlinger Sign Company, of Chicago.

The series of meetings were all under the very capable direction of I. C. Cole, sales manager of the company. The general comment from both the visitors and the resident members who attended the sessions was that too high praise could not be given for Mr. Cole's management of the entire affair.

The meetings were closed with a general review of the situation most feelingly conveyed by Mr. Cole. He stated that he believed the meeting had done much good, especially in this trading of ideas by men in different lines of trades, and that it had certainly brought out the fact that business conditions throughout the country were in a very healthy state of prosperity. He stated that with the advent of the new Homer Grand furnace, the popularity of all the Homer products would undoubtedly increase rapidly.

The morning after the convention was all over, and the various visitors were leaving either by train or autos, the factory resembled a bee hive on a sunny day. Not only were visitors leaving, but many salesmen were getting their material together for an immediate departure to their various destinations, scattering to all parts of the country. This conveys but a faint idea of the vast trade which the Home Furnace company has gained during its few years' location in Coldwater.

Homer Furnace Company Holds Sales Convention

At Coldwater, Michigan, Tuesday and Wednesday, September 7 and 8

THE annual sales convention of the Homer Furnace Company took place at Coldwater, Michigan, Tuesday and Wednesday, September 7 and 8, and headquarters for the meetings was at the Grant Hotel, which was practically taken over by a large number of delegates and representatives of the company both of this city as well as from nearly every state in the Union.

The official meeting was held in the Supervisors' room Tuesday forenoon at 8:30. Mayor A. B. Walker and Sheriff George Payne gave welcoming addresses, which were followed by a general discussion of the factory and its products. After the various talks, General Superintendent W. C. Cortright conducted the assembly through the plant, and explained the operations of the various departments.

At the opening of the convention S. D. Strong, President of the Homer Furnace Company, gave a very interesting and inspirational talk. Talks on subjects of interest were also made by President Strong at every session of the meeting.

In the afternoon Vice-president R. B. Strong gave an inspiring talk on the new Homer Grand furnace, and its possibilities not only from the salesmanship but from the practical viewpoint. Charles Pierson, of the U. S. Register Company, of Battle Creek, also spoke interestingly along this line.

That same evening the entire as-

sembly enjoyed a frazzle at Harmony Beach at Rose's Lake, which was followed by a business session.

On Wednesday morning LeRoy Palmer gave the opening talk, the subject being financing, auditing and purchasing. Then S. E. Moore, vice-president of the New Amsterdam Finance Corporation, of New York City, gave a highly instructive talk on Time Payment Paper and its Advantages. Also R. G. Fuller of Chicago, gave a fine talk on the advantages of the simplified book-keeping system.

Wednesday afternoon Attorney Glenn Cowell made the opening talk which was one of the most highly interesting of the sessions.

C. B. Strong, Vice President and General Manager, then headed a general discussion on Advertising, Merchandising and Sales, followed by talks from B. C. Jeffries, of the

Furnace Maker Evolves Unique Installer Contract Blank

Specification Calls for Installation According to Standard Furnace Code

REGARDLESS of whether a warm air furnace installer does his work in accordance with the precepts of the Standard Furnace Code or not, he must be concerned with forms of written contract that are to be used in putting his specifications and the consideration he is

to receive on paper. No good business man ever trusts his propositions to a verbal agreement. The need for a uniform contract blank has long been recognized.

It became so urgent that the Western Warm Air Furnace and Supply Association took the matter

in hand and drew up a contract blank which it was thought would meet the needs of all contractors. The committee having this work in charge reported at the December meeting of the association and the blank which they submitted for approval was read and adopted. This blank as adopted, together with the report of the committee, appeared in the issue of AMERICAN ARTISAN for December 5, 1925.

There was no mandate compelling any contractor or manufacturer member of the association to use this contract blank. It was drawn up for the convenience of its members, who could use it or not, as their fancy dictated.

Also recognizing the need for a definite written contract that would include everything and at the same time safeguard the contracting parties, Moore Brothers Company, Joliet, Illinois, have drawn up what is known to them as the "Specifications and Agreement for Installing a Warm Air Furnace." This specification and agreement sheet takes cognizance of each and every factor which enters into the installation of a warm air furnace. It is so worded as to give both purchaser and installer a clear statement of just what is to be done by each of the contracting parties, how far the contractor's liability extends, in whom the title to the property is vested, and all other matters for the protection and agreement between the contracting parties.

The accompanying reproduction of the contract blank will give the reader an excellent idea of how one furnace manufacturer has solved this problem for his dealers.

Aeolus Dickinson Company Has New Design of Mushroom Ventilator

The Aeolus Dickinson Company, 3346 South Artesian Avenue, Chicago, has recently issued a folder explaining the operation of the E-Z Damper cast iron floor vent. The floor vent itself—of the mushroom type—is a recent design and is known as the Griptite. It is espe-

This Seal of Quality

On Every Moore's Furnace

Specifications and Agreement for Installing a Moore's Self-Cleaning Furnace

BUILT BY

MOORE BROTHERS COMPANY

JOLIET, ILLINOIS

It is understood that the execution of this contract is contingent on our government's demands, strikes, accidents or other causes beyond the control of the contractor.

<p>Location</p> <p>Description</p> <p>Owner</p> <p>Furnace</p> <p>Rooms</p> <p>Warm Air Pipes</p> <p>Registers</p> <p>Cold Air Supply</p> <p>Stipulations</p> <p>Carpenter's Work</p> <p>Mason's Work</p> <p>Title</p> <p>Consideration</p> <p>Guarantee</p> <p>Acceptance</p>	<p>For the consideration hereinafter mentioned the undersigned heating contractor proposes to furnish material and to complete the installation of a warm air heating system according to following specifications in building located or to be erected at.....</p> <p>City State</p> <p>the same intended to be used for and owned by whose address is</p> <p>There shall be installed No. Moore's Air-Tight Furnace, the same to be installed according to Standard Code.</p> <p>Size of Size Size Oxidized Black Heating Space Rooms Rooms Pipe Register Copper Japanned in Room</p> <p>Amount of heating space in residence..... Rating of a No. Moore's Furnace. Size of Cold Air Boot....</p> <p>Size of Cold Air Pipe</p> <p>Size of Cold Air Registers</p> <p>General:—.....</p> <p>It is understood that the owner or purchaser assumes responsibility for the chimney draught, and damage that may occur to the furnace or material after delivered to the building.</p> <p>Any alterations or changes in the proposed system entailing extra expense will be subject to a charge additional to the consideration hereinafter mentioned.</p> <p>Carpenter's work shall be done at the expense of</p> <p>Mason's work shall be done at the expense of</p> <p>It is further understood that the intention of the parties hereto is that said furnace and material shall remain personal property. And it is covenanted that the title of said furnace and appurtenances thereto shall remain in the heating contractor until the consideration hereinafter mentioned shall be fully paid. In the event of default on the part of the purchaser in the payment of any part of the purchase price in accordance with agreement, the heating contractor shall have full right, power and authority to enter upon the said premises and remove the said furnace and appurtenances; and thereupon all payments which have been made by the purchaser thereon shall be forfeited to the heating contractor as compensation for the use of said furnace and appurtenances.</p> <p>The above specified apparatus shall be installed by the heating contractor for the sum of, payments to be made as specified in the purchasers' acceptance.</p> <p>The following guarantee to become effective when the building is completed, ready for permanent occupancy, provided, however, that the conditions required of the purchaser have been fully complied with.</p> <p>The heating contractor hereby guarantees the above specified furnace to be of ample capacity to heat rooms on first floor in which registers are placed to 70° Fahr., and on floors above to 65° Fahr. when outside temperature is zero. The heating contractor further guarantees all material to be used free from defects and that the system will be completed in a first-class workmanlike manner. It is further agreed by the heating contractor that in the event changes become necessary to make the system operate in accordance with this guarantee that all expense incurred for so doing shall be paid by said contractor.</p> <p>Date</p> <p>Heating Contractor.</p> <p>The purchaser has carefully read the foregoing proposition and agrees to the condition as stated and furthermore agrees to accept same and make payment as follows:</p> <p>Date of Acceptance</p> <p>Purchaser.</p>
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Showing Form of Contract Used by Moore Brothers Company

cially adapted for use in theatres and auditoriums.

Mr. Edwin P. Cobb, Sales Manager of the Aeolus Dickinson Company, says that while this folder has been distributed to architects and contractors whom they know to be interested in ventilation of this class, the company will gladly mail copies of the folder to anybody that would

be interested. He says further that insofar as they know this mushroom represents a new development in the method of handling the ventilation problems met with in this class of building. It is to the interest of everyone having to do with ventilating problems to obtain a copy of this folder for future reference and study.

Professor A. C. Willard Has Remarkable Record of Achievement

Furnace Men Should Consider Themselves Fortunate at Being Able to Have His Services in Their Research Work

IN a relatively short time, December 1 and 2 to be exact, the members of the National Warm Air Heating and Ventilating Association will again hold their meeting in the Urbana-Lincoln Hotel, Urbana, Illinois. At that time the meeting will be given over largely to the hearing of reports of the findings of the men who are conducting the research work of the warm air heating system. Chief among these men is, of course, Arthur C. Willard, Professor of Heating and Ventilating, Head of the Department of Mechanical Engineering of the University of Illinois.

The September issue of the *Aerologist*, which is edited by Dr. E. Vernon Hill, contains, under the heading of "Interesting People," a resume of Professor Willard's past connections which should be of a great deal of interest to men in the warm air heating industry, particularly those who are closely following the work of research. Therefore, excerpts of this article is hereinafter reproduced.

"Professor Arthur C. Willard was graduated in 1904 from the Massachusetts Institute of Technology, receiving the degree of Bachelor of Science in Chemical Engineering. That year he entered upon a life devoted to teaching when he accepted the post of instructor in Industrial Chemistry at the California School of Mechanical Arts in San Francisco.

In 1906 the East coast called Pro-

fessor Willard and he became Head of the Department of Mechanical Engineering at George Washington University, Washington, D. C.

From 1909 until August 1913 Mr. Willard temporarily left the path of the teacher and served his country in the capacity of Sanitary



Professor A. C. Willard

and Heating Engineer, U. S. Q. M. Corps, where he had charge of the preparation of plans and specifications, acceptance tests, and the awarding of contracts for heating and ventilating equipment of all United States Army posts.

September 1913 found Professor Willard back in his chosen field of teaching as Assistant Professor of Heating and Ventilation at the University of Illinois. Here his service has been crowned with rapid achievement, for he stepped into a

full professorship in 1917, and three years later was given the chair as Head of the Department of Mechanical Engineering, which he holds at the present time.

One of the outstanding features of his work at the University of Illinois has been the Warm Air Furnace Research Investigation, of which Professor Willard is in charge.

Concurrently with his work as a teacher, Professor Willard has served as consulting engineer on heating, cooking, and laundry equipment for National Army cantonments during the war; as consultant on ventilation for the New York State and the New Jersey Interstate Bridge and Tunnel Commissions; as consulting Mechanical Engineer for the Bureau of Mines; and most recently he has been appointed consultant to Chemical Warfare Service, U. S. War Department.

For more than a decade Professor Willard has been a valued member of the A. S. H. V. E., where he has acted on the Committee on Publication of the Guide, 1924; chairman of the Technical Advisory Committee on Infiltration of Air into Buildings, 1925; chairman of the Publications Committee, 1925; and Second Vice-President, 1926.

His pen has been a fluent and able one. In collaboration with Mr. L. A. Harding, Professor Willard has published "Mechanical Equipment of Buildings," Vol. I. "Heating and Ventilation," 1916, and Vol. II. "Power Plants and Refrigeration," 1918. Bulletins and Circulars totaling 600 pages and dealing chiefly with problems of warm air heating have been published. Professor Willard has published numerous articles.

Professor Willard is a member of the following societies: American Society of Heating and Ventilating Engineers, American Society of Mechanical Engineers, Society for Promotion of Engineering Education, and the Sigma Xi, Tau Beta Pi, Phi Kappa Sigma, Pi Tau Sigma, Sigma Tau, and Triangle fraternities.

How Do Furnace Installers View the Customer-Always-Right Policy?

Do They Live Up to the Spirit of the Guarantees They Make With Customers?

IS the customer always right? This question has undoubtedly presented itself for solution to sheet metal contractors and warm air furnace installers in all sections of the country. Although, of course, it would not happen to them nearly as often as it would to a hardware dealer, for instance.

The hardware dealer sells a razor. The customer takes it home. The following night his wife remains at a friend's for dinner and hubby is compelled to get his own dinner. He rushes to the grocer's, gets a can of beans, a can of tomatoes, and a can of chicken a la king. He proceeds to open these with the newly bought razor. The next morning when he goes to shave, the razor won't cut and he rushes back to the hardware dealer, cursing him for attempting to palm off his old junk on him at an exorbitant price. In the face of this the hardware dealer is expected to bow down before the customer and assume that he is always right.

It seems that no matter how fool-proof the contract is which a warm air furnace installer gets his customer to sign, there are instances where the installer has been very nearly left holding the bag. He often runs up against the necessity of returning to a job several times even after he has carried out the letter of the contract.

Now, most every normal individual is imbued with a sense of fairness. He can pretty nearly always tell when he is being imposed upon. And he is apt to get pretty hot under the collar when he finds out that one of his customers has been attempting to get something for nothing.

The universal practice among the large, well known stores is to assume that the customer is always right. Now, of course, the management of these stores knows that there are all kinds of people among

their customers. These customers do not wear their hearts upon the sleeves and it is next to impossible to distinguish the honest from the dishonest. They figure, however, that the majority of people with whom they deal are honest. Therefore, rather than run a risk of doing an injustice to a customer who has a just cause for complaint, and thereby making an enemy for the store, the management has determined to assume that in cases of complaint the customer is always right.

These stores realize that a certain percentage of the complaints that come in are in no way justified, but all of those stores who have adopted the policy that the customer is always right feel that the benefits they derive from the increase in good will which the policy brings them far outweighs the actual money they lose in having dishonest people take advantage of their liberality.

Most warm air furnaces on the market today are covered with a guarantee that takes care of any defects in the castings themselves that may get past the inspector. Most manufacturers in business today are willing and anxious to make good on defective products without much equivocation.

The better furnace installers, too, have now reached a point where they are willing to guarantee a certain definite temperature in the separate rooms of the dwelling in which the installation has been made, with certain reservations, of course.

In this way the purchaser of a warm air heating system is protected by a double guarantee, covering efficient operation of the system. Under these circumstances the warm air furnace installer has little that he can do but make good in case of failure of the system to function.

The point is, however, that the

warm air furnace installer should be careful of the spirit in which he makes good on these guarantees when called upon to do so. One thing that is particularly noticeable about the big stores that adhere to the policy that the customer is always right is that when a customer returns with a complaint or returns goods for credit, he is not compelled to go through a mountain of red tape in order to get his money back or at least to get proper credit. The spirit of "Money cheerfully refunded" is carried out to the letter and no questions asked.

To make good on a guarantee in a grudging or unwilling manner has the same effect upon the customer as not making good at all would have. The customer thinks to himself, "Well, he got me that time, but I'm a salted herring if he ever gets another cent of my money." And never fear that his experience with you will not be retailed at every opportunity.

The warm air furnace installer should, in-so-far as it is possible for him to do so align himself with a reputable furnace manufacturer and supply house. Then when he makes a guarantee and is called upon to make good because of defective parts that developed during the service of the system, he will not be left holding the sack.

The only sound policy for a furnace installer to pursue is, if you make a guarantee with a customer, live up to that guarantee in every respect. Make it a point to drop around and look the customer's heating system over from time to time while it is in operation. By this constant observation of the system under load you will be able to tell how it is functioning, whether satisfactorily or not. Then if you see that trouble is developing, you can rip the defective part out and replace it before the customer has had a chance to complain. You will also be better able to tell whether the customer has a just cause for complaint. Such practices build good will and there is nothing so important to you in business as the building and maintaining the good

will of your customers. You may never sell them again, but their good opinion of you is a very valuable as-

set to have when you are trying to interest some of their friends in a similar system.

"Illinois Observer" Finds Food for Thought in What Menk Says

Says Article Lends Enthusiasm Which Is Much Needed in Industry

IN the issue of AMERICAN ARTISAN for September 18, 1926, there appeared an article by R. W. Menk, of Heating Systems and Supply Company, relative to the attitude of furnace manufacturers and salesmen toward the warm air furnace business. In this article Mr. Menk asked the questions, "How far has the warm air heating industry traveled along the road of progress during the past few years? What future is there ahead for the industry?"

Following these questions, Mr. Menk gives a short dissertation on some experiences and observations he has made within the industry which have caused him no little concern.

Now comes the reaction. "Illinois Observer," who is not a stranger to readers of AMERICAN ARTISAN, refers to Mr. Menk's article as follows:

To AMERICAN ARTISAN:

Mr. R. W. Menk of Heating Systems and Supply Company, in his warm air heating article September 18, says: "If AMERICAN ARTISAN desires to illustrate them at some future time, or the readers are sufficiently interested to ask for them, we will gladly submit the layouts, etc."

For one reader, I'm "asking for them." Mr. Menk's article is very readable and stimulates thought. I know of lots of furnace installers—and I'm not overlooking myself—who could read it over more than once and learn something from it at each reading, and yet it is but an inkling of what I suspect Mr. Menk has under his hat about the furnace business.

The title you gave the article

wasn't taken from a list of select works of fiction, either.

Mr. Menk's article lends enthusiasm to the subject. We must build up enthusiasm before we try too hard to soak in the technical "stuff." A great percentage of your technical articles roll off the duck's back because of his resistive armor of indifference and skepticism.

On with the good work, Mr. Menk and AMERICAN ARTISAN.

"ILLINOIS OBSERVER."

Standard Furnace & Supply Issues Catalog Containing Standard Furnace Ordinance

The Standard Furnace & Supply Company, Omaha, Nebraska, of which Fred L. Nesbit is President and General Manager, has issued during this week a new general catalog that is a "darb" from the standpoints of lithography, typography and informative content. Nothing has been omitted from this issue that could in any possible way aid the warm air furnace installer in his work.

Immediately following the fore leaf inside the front cover is placed a complete reproduction of the Standard Furnace Ordinance, the latest of a long list of achievements of the Western Warm Air Furnace and Supply Association. A description of the purposes of this Standard Furnace Ordinance, together with the ordinance itself, appeared in the August 7, 1926, issue of AMERICAN ARTISAN.

The second section of the book is given over to the description of the many types and sizes of furnaces manufactured and carried in stock by the Standard Furnace & Supply Company.

Then comes the section on furnace supplies. Here wall pipe, boots, offsets, elbows, angles, stack heads, tees, all these in the single and double types, are attractively placed. Floor register boxes, galvanized cold air shoes, registers and cold air faces are prominently placed and priced in the center of this attractive book.

In the back of the book are located many other appliances and accessories of the warm air furnace, as well as a partial list of tools and supplies used by the warm air furnace installer.

Taken on the whole the catalog is a masterpiece and should be in the hands of every progressive warm air furnace man.

Here's what J. A. Schoenthal, Ogallala, Nebraska, said after receiving his copy of the book:

"Just received your new catalog. It is the best and most complete of any catalog out. Surely a dandy. If you have later discount and price sheets than have been forwarded, kindly send them on.

"Please send me information and prices on the warm air fan you have illustrated. I want to know more about it."

"P. S.—The new rules for estimating furnace and pipe sizes is sure a boon to the guy out in the sticks like me."

Midland Furnace Club Meets at Congress Hotel, Chicago, September 17

A meeting of the Midland Club was held at the Congress Hotel, Chicago, Friday, September 17. The meeting was very well attended and problems pertaining to the furnace industry were thoroughly discussed.

Problems such as freight rates, shipping classifications, crating, packing, accounting, costs, credit, etc., were given thorough consideration by the members of the club in attendance for the benefit of the industry and the dealers in it.

R. C. Walker, General Manager of the Meyer Furnace Company, is President of the club and is also chairman of the steel furnace manu-

facturers' division of the Midland Club.

It might be mentioned here, inci-

dently, that Mr. Walker is leaving for California on September 28, to be gone until November 1.

the buyer will have seen the folly of trying to get a quality heating system at a low price."

Code Furnace Installers Must Determine to Keep Out Price Talk

No Mention of Price Made Until Customer Is Ready to Place Order

STANDARD CODE furnace dealers are in a class by themselves. They are the "upper crust" of the warm air furnace business. Upon them rests the responsibility of lifting the industry to a higher level than it now enjoys. But they are not compelled to do all the work unaided. They have the National Warm Air Heating and Ventilating Association back of them.

As an inspiration to these furnace installers the National Warm Air Heating and Ventilating Association has given out the following message:

"There are still a few dealers who do not see the logic in refusing to take furnace jobs at profitless prices, or to keep out price talk to a prospect until he has about decided to place the order. Some feel that price is always a strong selling argument; that when an article is cheaper than its competitors it should sell better.

"But here's what happens. These dealers are so anxious to sell their furnaces that the first thing they say to a prospect is: 'And, you know, Mr. Jones, warm air furnaces are cheaper than any other kind of heater.' And, before the dealer knows it, Mr. Jones has the price idea in his mind and he can't think anything else. The chance of selling him at a good profit is about gone.

"One furnace dealer, commenting on this policy of selling, stated the other day: 'We have lost several jobs because we did not vary from the Standard Code, but we feel sure that we will be called upon to take these jobs out either this or next winter, replacing them with Standard Code installations.'

"That is the experience of many Code dealers right now. Everybody

wants a good heating system. If the dealer won't supply it the first time, the home owner will eventually go to one who will. In other words, a job lost to a cut-price dealer may not be lost at all, but probably will in a season or two come to the Code dealer. And when it comes there will be no price argument, for

Wherein the Chief Evil of Price Cutting Is Paraded for the Retailer

Quoting an Analysis of Price Cutting, Showing How the Retailer Indulging Is Misled

PRICE cutting is an evil. In a recent issue of The Informant there was an article dealing with the evils of price cutting, wherein the writer stated that when the price was cut on a piece of merchandise it would be necessary to procure an additional volume of business if it were desired to hold up the profits to a certain definite level. The table was as follows:

On a 20 Per Cent Margin of Profit

A cut of 5 per cent requires 18 $\frac{2}{3}$ per cent more volume.

A cut of 8 per cent requires 35 $\frac{1}{8}$ per cent more volume.

A cut of 10 per cent requires 50 per cent more volume.

A cut of 12 $\frac{1}{2}$ per cent requires 75 per cent more volume.

A cut of 15 per cent requires 112 $\frac{1}{2}$ per cent more volume.

The editor of that publication received several letters making further inquiry regarding the method employed in determining the total volume of business that would be necessary. Some inquirers wanted to know how the table was worked out. The problem was referred to Paul Findlay, who is an expert in

margins, mark-up, profits, etc., and he has returned the following:

"Assume sales at 25 per cent margin. In that case, sales of \$100 will yield \$25 gross, cost being \$75 and margin \$25.

"If now, we cut prices 15 per cent, the goods we sold for \$100 will bring us in only \$85. Where the \$100 yielded us \$25, the \$85 will yield us only \$10. So here is what we must do on this new basis.

Sell \$85 worth to get \$10.00
Sell another \$85 worth to get 10.00
Sell another \$42.50 worth to
get 5.00

Before we get back to the old basis of gross earnings of . 25.00

"But that is not all. For a given quantity of goods formerly sold for \$100: When we cut prices 15 per cent and get only \$85 for that same physical quantity of goods, we have to sell not merely \$127.50 more in value but one and a half times the physical quantity of goods; so to cut 15 per cent on prices entails the handling of 250 per cent of the first physical quantity of merchandise to return us the same gross money.

"And yet again: it will cost us

fully two and a half times the expense to handle two and a half times the merchandise, hence on the basis of cutting our margin 15 per cent we have multiplied our expenses on the same physical quantity of merchandise by two and a half!

"I am short on mathematical

formulae (please note the Latin!) but anybody who wants to take apart any of the statements in your table and build up costs, expenses and compensations as I have done on this item can, I am sure, convince himself that price cutting is pretty expensive business."

Scientific Methods of Collecting Delinquent Accounts

One Merchant Gets All Information He Can About Customers

HARDWARE retailers, sheet metal contractors and warm air furnace installers alike are confronted with a common problem—that of collecting the money from customers to whom they have sold merchandise or services. All men in business run up against these delinquent customers and are compelled to resort to all sorts of ruses to bring in the money.

An interview had recently with a hardware man who has had his full share of delinquent account collecting revealed several sure-fire methods of collecting delinquent accounts.

To begin with, the bookkeeper of this man's store has strict instructions to get statements out so that they reach the debtor customer promptly on the first day of the month. The idea in this is that most householders always receive some bills on the first of the month. They expect to pay these bills on the first of the month.

Now, if your statement is among those that the debtor receives on the first of the month, the chances are pretty good that yours will be paid along with the others.

Should it occur, however, that your statement comes in two, three, four or more days after the first of the month—after the check book has been put back into the desk—the tendency is to let the bill go until the following month. See to it that the statements go out on time.

The management of this hardware store always takes a paternal

interest in the customers. He tries to find out as much about his customers as he can and then keeps them within bounds on their purchases.

In one particular instance a boy came in to purchase a gun. This boy was of the school age and had no visible means of paying for the gun. He wanted to buy it on the installment plan, paying a small sum down and the balance in small monthly amounts. Instead of letting the boy have the gun, the merchant made an arrangement whereby the boy could pay him small allotments at regular intervals. After the purchase price of the gun was almost completed, the merchandise was transferred to the boy.

In this way the merchant not only protected his own interests, but he instilled in the boy a sense of responsibility that will stand him in good stead later in life.

The credit rating of each of his time payment customers is carefully watched by the merchant. He tries to find out as much about their habits as possible. In this way he determines whether Mr. So and So is a man who meets his obligations promptly or not. He also tries to keep the customers within certain bounds; that is, he does not allow any one man to buy and charge a bill of merchandise of such proportions that it will be difficult for the customer to meet the payments. In this way he avoids a lot of trouble.

Another good practice is to find out when the factories and stores

pay their help. In this way it is easy to know when a debtor is "flush" and, therefore, more liberal than at any other time. It is also diplomatic, when the balance is large, not to mention the amount to the debtor. Try, if possible, to reduce the balance by getting several payments on account. In this way the entire balance can be cleaned up, whereas if the balance is kept prominently before the debtor, he is apt to think the bill is too large to clean up.

Often the debtor's sense of pride can be appealed to. An effective method of doing this is to place in your own hand writing in the lower left hand corner of the statement a notation something on this order: "What about this party? Who recommended him?" Then immediately below this in the hand writing of the bookkeeper insert the words, "He was well recommended by the firms on the sheets attached."

Evidently the debtor pays attention to this and feels that he is eavesdropping on some office talk about his integrity. He very likely feels that it was only by accident that these notices got into the mail and came before his eyes. At any rate, we have had results from that plan. Possibly the man did not wish us to get in touch with a reference, or it may be that the case appealed to his pride.

When the case seems almost hopeless and the debtor pays absolutely no attention to the statements or special dun letters that you send out, the way to get him is this: Send him a bill for \$25 or \$50 more than the original amount, or if he has made one or two payments on account, send the bill without taking cognizance of these payments. The debtor is bound to come storming into the store and demand to know what it's all about. You can easily calm him down by sending the statement to the bookkeeping department and having the correction made. Then some definite arrangement can be made with the delinquent to clear up the remainder of the past due account.

National Steel & Machine Tool Exposition an Impressive Sight

This week at the Chicago Municipal Pier one of the greatest machine tool exhibits was held, known as the Eighth National Steel & Machine Tool Exposition. This exposition was held in connection with the annual convention of the American Society for Steel Treating at the Drake Hotel.

In 1 mile line, or the entire length of the north side of the Municipal Pier, there were three solid lanes of tool and machine displays, comprising three miles of displays in all.

Machines of every shape, size, construction and for every conceivable purpose were here exhibited.

Among the exhibitors were many of the friends of AMERICAN ARTISAN.

Armstrong-Blum Manufacturing Company were present with a line of steel cross-cut and band saws. Light-duty lathes were also on exhibit here.

Armstrong Brothers Tool Company had a display of small tools, dies, wrenches in numerous sizes and a complete line of small steel vices.

The Whitney Metal Tool Company was on hand with its punches and squaring shears.

Unishear Company, Inc., had an exhibit of both heavy and light shearing tools which they were demonstrating. Maplewood Machinery Co. were also in this booth.

E. C. Atkins Company were present with a line of saws.

Black & Decker Manufacturing Company had a line of both heavy and light duty grinders and buffers.

Joseph T. Ryerson and Son, Inc., had a unique friction saw on display as well as a number of lathes and a sign which let the audience know that the company made "everything in working machinery."

The Niagara Machine and Tool Works had a group of heavy duty shears and punches in operation.

Henry Disston & Sons, Inc., and the Chicago Pneumatic Tool Company were also on hand with attractive exhibits.

W. A. Whitney Manufacturing Company had an elaborate display of small tools and dies.

The Oxweld-Acetylene Company were also present.

Taken all in all the exposition brought together one of the most impressive tool and machine exhibits that has ever been held, and the exhibitors deserve a great deal of credit for their part in it.

Hardware Special to Be Run from Chicago to Atlantic City

The Pennsylvania System is arranging to operate a special train to the Atlantic City hardware convention, leaving Chicago at 1:05 p. m. Sunday, October 17th, and arriving at Atlantic City at 9 a. m. Monday October 18th, making intermediate stops at Plymouth, Fort Wayne, Lima, Crestline, Mansfield, Alliance and Pittsburgh.

If you are interested in making reservation on the "Hardware Special," it is suggested that you communicate with Mr. W. E. Blachley, Division Passenger Agent, Pennsylvania Railroad System, Union Station, Chicago, Illinois.



National Hardware Association convention, Atlantic City, New Jersey, October 19, 20, 21, 22; headquarters, Ambassador Hotel; James T. Fernley, secretary-treasurer, Philadelphia.

American Hardware Manufacturers Association convention, Atlantic City, New Jersey, October 19, 20, 21, 22, 1926; headquarters, Ambassador Hotel; Charles F. Rockwell, 342 Madison Avenue, New York, secretary-treasurer.

American Welding Society, Annual Fall Meeting, Buffalo, New York, November 17, 18 and 19, 1926. Carl D. Miller, secretary, Burke Electric Company, 508 Morgan Building, Buffalo.

National Warm Air Heating and Ventilating Association mid-year meeting, Urbana, Illinois, December 1 and 2, 1926, Urbana-Lincoln Hotel. Allen W. Williams, secretary, 174 East Long Street, Columbus, Ohio.

Texas Hardware & Implement Association Convention, Dallas, Texas, January 18 to 20, 1927. Dan Scoates, P. O. Box H, College Station, Texas, secretary.

Michigan Retail Hardware Convention and Exhibition, Grand Rapids, Michigan, February 8, 9, 10, 11, 1927. Arthur J. Scott, Secretary, Marine City,

Michigan. K. S. Judson, 248 Morris Avenue, Grand Rapids, Michigan, Exhibit Manager.

Pennsylvania and Atlantic Seaboard Hardware Association, Philadelphia Commercial Museum, February 15, 16, 17 and 18, 1927. Sharon E. Jones, Secretary-Treasurer, Wesley Building, Philadelphia, Pennsylvania.

Illinois Retail Hardware Association convention and exhibit, Hotel Sherman, Chicago, February 15, 16, 17, 1927. Leon D. Nish, 14 North Spring Street, Elgin, Illinois, secretary.

New England Hardware Dealers' Convention and Exhibition, Mechanics' Building, Boston, Massachusetts, February 22, 23 and 24, 1927. George A. Fiel, Secretary, 80 Federal Street, Boston.

Michigan Sheet Metal and Roofing Contractors' Association, Pantlind Hotel, Grand Rapids, March 1, 2 and 3, 1927. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids.

Texas Sheet Metal Contractors' Association, Hotel Adolphus, Dallas, Texas, April 24 and 25. Harry Staney, Secretary-Treasurer, 2422 Alamo Street, Dallas.

National Association of Sheet Metal Contractors, Adolphus Hotel, Dallas, Texas, April 26, 27, 28 and 29, 1927. W. C. Markle, Secretary, 850 West North Avenue, Pittsburgh, Pennsylvania.

Retail Hardware Doings

Alabama

S. H. Andrews Hardware Company of Jackson has been incorporated with a capital of \$10,000. Incorporators are: Mrs. Lucie Wild Andrews, Walter Wild Andrews, and Sam N. Andrews.

Home Furniture and Hardware Company, Leeds, has been incorporated with a capital of \$25,000. Incorporators are: D. D. Herndon, Roy J. Kelly and Joe M. Jefferson.

Illinois

Waukegan Hardware Company, Incorporated, 13 North Genesee Street, Waukegan, has been incorporated with a capital of \$20,000, to deal in general hardware and sporting goods. Incorporators are: Tony Grobelch, John W. Melcher and William E. Herr.

Kansas

Home Hardware Company of Baxter Springs has been incorporated with a capital of \$5,000.

J. W. Dodds has purchased the Chas. Hardware Store at Lincoln from Joe Suive.

Michigan

The D. A. King and Son Hardware store at Saginaw has been damaged by fire. The loss is estimated at between \$25,000 and \$30,000.

Minnesota

J. C. Beckert has sold his hardware business at Faribault to G. G. Grunert.

Missouri

E. H. Telhorst has opened a hardware store at 7501 South Broadway, St. Louis.

H. Steiner and Sons of Prairie City have purchased the Rudolph Steiner Hardware store in Rockville.

On the strength of its 35 Year Record for Durability—



THE reputation of Wheeling Roofing Ternes for permanence and trouble-free service, has gained steady headway in the thirty-five years this product has been on the market. Experience in every part of the country has established

for all time, the safety and economy of this fire-proof roofing.

Numbered among those who use and recommend Wheeling Roofing Ternes, are many of the most prosperous sheet metal shops, contractors and architects. They know that Wheeling Roofing Ternes are better today than ever before because they are made of Ohio Metal (Open Hearth Copper Alloy) heavily coated with new tin and new lead by the Wheeling Hand Dipping process.

Judge this proven product in the same light in which your customers judge your reputation for service. Specify Wheeling — with the 35 year record for durability.

Wheeling Corrugating Company, Wheeling, W. Va.



Wheeling ROOFING TERNES

NEW YORK
ST. LOUIS

PHILADELPHIA
KANSAS CITY

CHICAGO
CHATTANOOGA

MINNEAPOLIS
RICHMOND

Mention AMERICAN ARTISAN in your reply—Thank you!

Gain in Steel Mill Operations—Producers Operating at Almost 85 Per Cent Capacity

Tin and Copper Are Dull—Lead and Zinc Market Steady With Moderate Demand

THE mid-week reviews of the steel industry paint a cheerful picture. Producers are operating almost uniformly at 85 per cent of capacity, compared with 77 a year ago and 63 two years ago.

"New orders for finished steel and deliveries on those placed in the summer continue in fair balance," the Iron Age says. "Chicago outdoes other districts in reporting the last week's sales and specifications as the best since early August.

"This far in September, rail buying and rail inquiry for 1927 have been closely in line with what developed at this time a year ago.

"Buying of rolling stock is starting just as the books of the car shops are nearly bare."

"Major developments have been on the side of continued confidence," the Iron Trade says. "Automobile production is bowling along at a rate which, if maintained proportionately in the later months, should surpass the 1925 total."

Copper

The copper market is very dull again and the buying intermittent. On Tuesday there was very little inquiry and there were sellers at 14.30 cents Connecticut points up to the end of the year.

First quarter was offered at 14.40 cents delivered at Connecticut points but both buyers and speculators are holding off.

This price could probably be shaded were any actual disposition shown by buyers. Meanwhile, the price is entirely nominal.

In the export market buyers and sellers are from five to seven and one half points apart.

There are buyers at from 14.12½ cents to 14.15 cents f.a.s. for October, 14.20 cents f.a.s. for November but traders and first hands are holding for the same prices as yesterday, namely 14.25 cents f.a.s. for Octo-

ber, 14.27½ f.a.s. for November and 14.30 f.a.s. for December.

First quarter could be bought today at 14.40 cents f.a.s. but speculators are not showing any interest.

Zinc

Domestic consumption continues heavy but buying at the moment is not active and prices are practically unchanged, 7.47½ cents East St. Louis basis being asked for Prime Western, but in some directions 7.45 cents appearing possible.

Demand for Brass Special is dull and this grade can be bought at almost the price for Prime Western, some being offered today as low as 7.50 cents, East St. Louis basis.

Zinc ore was again \$50.00 in Saturday's Joplin market and producers apparently did not obtain all they wanted at that price, sales being about 13,000 tons against shipments for the week of about 17,000.

Lead

The domestic market is not remarkably active, but consuming inquiries for October and November are becoming more frequent—a sign of gaining confidence, and in the "outside" market there is no disposition to quote these positions at any considerable discount, offerings at 8.45 cents for the two months combined being reported accepted today.

Tin

Straits sold at 68.50 cents for October, 67.00 cents for November, 66.50 cents for December early Monday, with same prices bid for further lots, and if offered ⅛ cent higher, would undoubtedly have found buyers.

Market closed with nothing offered under 68.75 cents October, 67.25 cents November, 66.75 cents December.

There seems to have been no business from consumers and outside of the interest shown by traders the market has been stagnant with

prompt delivery in limited supply at 70.25 cents and September delivery at 70.12½ cents asked.

No new developments are reported in the situation regarding estimates of American deliveries and Straits shipments for September and a slight increase in the visible supply October 1st is still generally expected.

Solder

Chicago warehouse prices on solder are as follows: Warranted 50-50, \$43.75; commercial 45-55, \$40.75, and plumbers', \$37.75, all per 100 pounds.

Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.50 to \$18.00; old iron axles, \$24.00 to \$24.50; steel springs \$18.50 to \$19.00; No. 1 wrought iron, \$13.00 to \$13.50; No. 1 cast, \$16.00 to \$16.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 9 cents; zinc, 5 cents, and cast aluminum, 19 cents.

Pig Iron

Sales of about 1,500 tons of Bessemer pig iron have been made by a valley furnace interest in the past few days at \$19.00, valley furnace, this total including a single block of 1,000 tons.

For some time past there have been sales at short intervals at the \$19.00 price, when it was understood that there were sellers at \$18.00, but this is the first case in this period of a thousand-ton lot going at the \$19.00 price.

In foundry iron there has been a similar divergence of prices. Last July sales developed at the new low price of \$17.50 but a number of important sellers have continuously refused to go below \$18.00 and one or two have been quoting \$18.50.

Two Brands with but a Single Thought—

"TAYLOR QUALITY"

For those who want the best roofing tin that can be had,
we recommend our HAND MADE

TARGET AND ARROW

For those who want the best machine made plate that
can be made, we offer our

TAYLOR'S EXTRA COATED 40 lb. Copper Bearing O. H.

Years of experience have taught Architects and Builders to
accept TAYLOR QUALITY on sight. This means sales for
roofers who use roofing tin made by

N. & G. TAYLOR COMPANY
PHILADELPHIA

Headquarters for Good Roofing Tin Since 1810

EVERYTHING USED IN SHEET METAL WORK

A Complete Stock Insures Prompt Shipment

In our warehouse you will find one of
the most complete stocks in the country.
Not only complete as to quantity but
selected by men who have had many
years of experience.

There are 12 men in our employ who
have been with us a total of 261 years—
an average of 22 years per man. It is
the knowledge resulting from this expe-
rience that we offer you in Osborn
Service.

The J. M. & L. A. OSBORN CO.
CLEVELAND

Buffalo Warehouse, 64-68 Rapin Street



INLAND

*At the
Service
of Steel
Users*

INLAND STEEL COMPANY
38 South Dearborn Street, Chicago
Works: Indiana Harbor, Indiana; Milwaukee, Wisconsin
Chicago Heights, Illinois
Branch Offices and Representatives
ST. PAUL • ST. LOUIS • SALT LAKE CITY • MILWAUKEE
KANSAS CITY • NEW ORLEANS • EL PASO

Chicago Warehouse Metal and Furnace Supply Prices

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON

Chicago Foundry	\$21 50
Southern Fdy., No. 3	27 01
Lake Superior Charcoal	29 04
Malleable	21 00

FIRST QUALITY BRIGHT

TIN PLATES	
IC 20x28 112 sheets.....	\$25 10
IX 20x28.....	29 40
IXX 20x28 56 sheets.....	16 20
IXXX 20x28.....	17 55
IXXXX 20x28.....	18 95

TERNE PLATES

Per Box	
IC 20x28, 40-lb. 112 sheets.....	\$27 90
IX 20x28, 40-lb. 112 sheets.....	30 90
IC 20x28, 25-lb. 112 sheets.....	32 20
IX 20x28, 25-lb. 112 sheets.....	35 20
IC 20x28, 20-lb. 112 sheets.....	20 25
IX 20x28, 20-lb. 112 sheets.....	23 00
IC 20x28, 15-lb. 112 sheets.....	16 55

"ARMCO" INGOT IRON PLATES
No. 8 ga. up to and including
1/4 in.—100 lbs.....\$4 55

COKE PLATES

Cokes, 80 lbs., base, 20x28.....	\$12 60
Cokes, 90 lbs., base, 20x28.....	12 80
Cokes, 100 lbs., base, 20x28.....	13 00
Cokes, 107 lbs., base, 1c.....	13 20
Cokes, 125 lbs., base, 1X.....	15 70
Cokes, 155 lbs., base, 56 sheets.....	8 70
Cokes, 175 lbs., base, 56 sheets.....	9 55
Cokes, 195 lbs., base, 56 sheets.....	10 40

BLUE ANNEALED SHEETS

Same 10 ga.....per 100 lbs. \$2 80
"Armco" 10 ga.....per 100 lbs. 4 00

ONE PASS COLD ROLLED

BLACK	
No. 18-20.....per 100 lbs.	\$2 75
No. 22.....per 100 lbs.	3 90
No. 24.....per 100 lbs.	3 95
No. 26.....per 100 lbs.	4 05
No. 27.....per 100 lbs.	4 10
No. 28.....per 100 lbs.	4 20
No. 29.....per 100 lbs.	4 35
No. 30.....per 100 lbs.	4 45

"ARMCO" GALVANIZED

"Armco" 24.....per 100 lbs. \$5 25

GALVANIZED

No. 16.....per 100 lbs.	4 30
No. 18.....per 100 lbs.	4 45
No. 20.....per 100 lbs.	4 60
No. 22.....per 100 lbs.	4 65
No. 24.....per 100 lbs.	4 80
No. 26.....per 100 lbs.	5 05
No. 27.....per 100 lbs.	5 15
No. 28.....per 100 lbs.	5 30
No. 30.....per 100 lbs.	5 70

RAR SOLDER

Warranted 50-50.....per 100 lbs. 43 75

Commercial 45-55.....per 100 lbs. 40 75

Plumbers.....per 100 lbs. 27 75

ZINC

In Slabs.....\$2 50

SHEET ZINC

Cash Lots (600 lbs.).....\$12 75

Sheet Lots.....14 75

BRASS

Sheets, Chicago base.....	19 1/2c
Tubing, braced base.....	23 1/2c
Mill base.....	19 1/2c
Wire, base.....	19 1/2c
Rods, base.....	17 1/2c

COPPER

Sheets, Chicago base.....	23c
Mill base.....	23c
Tubing, seamless base.....	26c
Wire, No. 9 B & S Ga.....	19 1/2c
Wire, No. 10, B & S Ga.....	19 1/2c
Wire, No. 11 B & S Ga.....	19 1/2c
Wire, No. 8 B & S Ga. and heavier.....	19 1/2c

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

LEAD

American Pig	\$ 9 45
Bar	10 45

Sheet

Full Coils.....per 100 lbs.	14 00
Cut Coils.....per 100 lbs.	14 25

TIN

Pig tin.....per 100 lbs.	78 50
Bar tin.....per 100 lbs.	79 50

ASBESTOS

Paper up to 1/16.....	6c per lb.
Roll board.....	6 1/2c per lb.
Mill board 3/32 to 1/2.....	6c per lb.
Corrugated Paper (250 sq. ft. to roll).....	\$8.00 per roll

BRUSHES

Hot Air Pipe Cleaning	
Bristle, with handle, each.....	\$0 85
Flue Cleaning	
Steel only, each.....	1 25

BURRS

Coppers Burrs only.....45%

CEMENT, FURNACE

American Seal, 5-lb. cans, net.....	\$ 40
American Seal, 10-lb. cans, net.....	80
American Seal, 25-lb. cans, net.....	2 00
Pecora.....per 100 lbs.	7 51

CHIMNEY TOPS

Iwan's Complete Rev. & Vent.....	30%
Iwan's Iron Mountain only.....	35%
Standard.....	30 to 40%

CLINKER TONGS

Front Rank, each.....	\$0 75
Per doz.....	8 40

CLIPS

Damper	
Acme, with tail pieces, per doz.....	\$1 25
Non Rivet tail pieces, per doz.....	25

COPPERS—Soldering

Pointed Roofing	
3 lb. and heavier.....per lb.	40c
2 1/2 lb.....per lb.	45c
2 lb.....per lb.	48c
1 1/2 lb.....per lb.	55c
1 lb.....per lb.	60c

CORNICE BRAKES

Chicago Steel Bending Nos. 1 to 6B.....Net

CUT-OFFS

Kuehn's Korrekt Kutoffs:	
Galv., plain, round or cor. rd. standard gauge.....	40%
26 gauge.....	30%

DAMPERS

"Yankee" Hot Air	
7 inch, each 20c, doz.....	\$1 75
8 inch, each 25c, doz.....	2 40
9 inch, each 30c, doz.....	2 75
10 inch, each 35c, doz.....	3 00

Smoke Pipe 7 inch, each.....\$0 25

8 inch, each.....	40
9 inch, each.....	50
10 inch, each.....	60
12 inch, each.....	90

Reversible Check 8 inch, each.....\$1 50

9 inch, each.....1 70

DIGGERS

Post Hole	
Iwan's Split Handle (Eureka) 4-ft. Handle.....per doz.	\$14 00
7-ft. Handle.....per doz.	36 00
Iwan's Hercules pattern, per doz.....	14 90

EAVES TROUGH

Galv. Crimpedge, crated..75 & 5%

ELBOWS

Conductor Pipe Milcor.	
Galv., plain or corrugated, round flat Crimp.....	65%
Std. Gauge.....	60%
28 Gauge.....	40%
26 Gauge.....	40%
24 Gauge.....	10%

Square Corrugated

Standard Gauge.....	50%
No. 24 Gauge.....	45%
26 Gauge.....	30%

Fortice Elbows

Standard Gauge Conductor Pipe, plain or corrugated.....	70 & 5%
Not nested.....	70 & 5%
nested solid.....	70 & 5%

ELBOWS—Stove Pipe

1-piece Corrugated. Uniform Blue "Milcor" No. 28 gauge.....	Doz. \$1 15
5-inch.....	1 25
6-inch.....	1 25
7-inch.....	1 75

Special Corrugated

8-inch.....	\$1 00
7-inch.....	1 60

Adjustable—Uniform Blue

"Milcor" No. 28 Gauge. Uniform Blue.....	\$1 65
5-inch.....	1 75
6-inch.....	2 40
7-inch.....	2 40

WOOD FACES—50% off list.

726-6-12 1/4% (100 rods).....	\$28 68
1948-6-14 1/4% (100 rods).....	43 62

FENCE

726-6-12 1/4% (100 rods).....	\$28 68
1948-6-14 1/4% (100 rods).....	43 62

FILES AND RASPS

Heller's (American).....	50-10%
American.....	60-10%
Arcade.....	50%
Black Diamond.....	40-10-5%
Eagle.....	50%
Great Western.....	50%
Kearney & Foot.....	50%
McClellan.....	50%
Nicholson.....	50%
Simonds.....	60%

FIRE POTS

Otto Bernz Co.	
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas.....	55%
West of above boundry line.....	61%

Clayton & Lambert's

East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Amarillo, San Angelo and Laredo, Texas.....	52%
West of above boundary line.....	48%

Geo. W. Diener Mfg. Co.	
No. 02 Gasolene Torch, 1 qt.....	\$ 5 55
No. 0250, Kerosene, or Gasolene Torch, 1 qt.....	7 50
No. 10 Tinner's Furn. Square tank, 1 gal.....	12 00
No. 15 Tinner's Furn. Round tank, 1 gal.....	12 00
No. 21 Gas Soldering Furnace.....	3 00
No. 110 Automatic Gas Soldering Furnace.....	10 50

Double Blast Mfg. Co. Gasolene, Nos. 25 and 36.....60%

Quick Meal Stove Co. Vesuvius, F. O. B. St. Louis 30% (Extra Disc. for large quantities)

Chas. A. Hones, Inc.	
Buzzer No. 1.....	\$ 9 00
Buzzer No. 2.....	12 00
Buzzer No. 22.....	13 50
Buzzer No. 42.....	15 00
Buzzer No. 43.....	19 00

GALVANIZED WARE

Pails (Galv. after made).	
10-qt.....	\$2 12
Tubs (Galv. after made).	
No. 1.....	6 00
No. 2.....	6 25

GLASS

Single Strength, A, 25-in. brackets.....	85%
Single Strength, A, 34 to 40-in. bracket.....	82%
Single Strength A, all other brackets.....	81%
Double Strength A, all sizes.....	82%

HANGERS

Conductor Pipe	
Milcor Perfection Wire.....	35%
Eaves Trough	
Milcor Eclipse Wire.....	15%
Milcor Triplex Wire.....	10%
Milcor Milwaukee Extension 10% forming) List plus.....	13 1/4%
Milcor Selflock E. T. Wire, List plus.....	50%

HOOKS

Box	
V. & B. No. 1, each.....	\$0 24
Conductor	
Milcor "Direct Drive" Wrought Iron for wood or brick.....	15%

Nay	
V. & B. No. 1, each.....	\$0 24

HUMIDIFIERS

"Front-Rank," Automatic	
In single lots.....	50%
In lots of 10 or more.....	50-50%
In lots of 25 or more.....	50-10%
Vapor pans, etc., each.....	50%

LIFTERS

Stove Cover	
Coppered.....per gro.	\$6 00
Alaska.....per gro.	4 75

MAILETS

Tinner's	
Hickory.....per doz.	\$2 25

MITRES

Galvanized steel mitres, and caps, end pieces, outlets.....	30%
Milcor Galv. one piece stamped.....	40%

NAILS

Cut Steel.....	\$4 35
Cut Iron.....	4 35
Wire	
Common.....	3 05
Cement Coated.....	3 05

(Continued on page 180)



Made in nine sizes

FAMOUS SINCE 1819—

Over one hundred years of tool making experience is built into each and every PEXTO Snip. The line is very complete and consists of every practical style and size. Material is the best, the finish is durable and they are fully guaranteed.

Write for catalogue No. 25A showing complete line of Sheet Metal Working Machines and Tools.

THE PECK, STOW & WILCOX CO.

SOUTHINGTON, CONN., U. S. A.



Metal Shingles—Both Painted and Galvanized

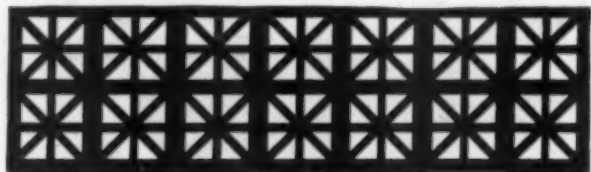
CORTRIGHT Painted Shingles come painted red or green.

Our galvanized shingles come hand dipped; also stamped from sheets already galvanized.

All Cortright Shingles are made in four well designed patterns, and are shown in our booklet "Concerning that Roof." Glad to send a copy.

CORTRIGHT METAL ROOFING CO.
50 N. 23rd Street, Philadelphia
528 S. Clark Street, Chicago

CORTRIGHT METAL SHINGLES



PERFORATED METAL GRILLES

All Styles of Perforations
All Sizes of Perforations
All Thicknesses of Metal

MADE IN STEEL, BRASS, BRONZE AND COPPER

Highest quality metal and workmanship.
Write for catalog today.

DIAMOND MANUFACTURING COMPANY
WYOMING, PA.

The NEW IMPROVED "STANDARD" Rotable Ventilator



Patents pending

This favorite cone-shaped ventilator is now improved in several important points.

The weight of the ventilator body is now carried on a concave thrust bearing nested in the apex of the conical body. This bearing turns upon the pivot point of the stationary center spindle.

The bronze Guide Bushings are now made of non-corrosive bronze which minimizes friction and any tendency to screech when body is rotating.

There are other new features. Write today for new catalog and price list.

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We sell the best grades of all kinds of Sheet Metal.
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229 to 237 ARCH STREET
WAREROOMS AND FACTORY: 100 to 114 BREAD STREET
PHILADELPHIA, PA.

Manufacturers of "Quaker City" line of Miters, Ends, Caps and Outlets

GALVANIZED STEEL
BLACK STEEL
BLACK and GALVANIZED ARMCO IRON
BLACK and GALVANIZED TONCAN
METAL
TERNE PLATE
BRIGHT TIN
ZINC
LEAD
COPPER

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NETTING, POULTRY	
Galvanized before weav- ing	57½-5%
Galvanized after weaving.	52½-6%

PASTE	
Asbestos Dry Paste:	
200-lb. barrel	\$16 00
100-lb. barrel	8 75
25-lb. pail	3 50
10-lb. bag	1 10
5-lb. bag	60
2½-lb. cartons	35

PIPE	
Conductor	
Cor. Rd., Plain Rd. or Sq.	
"Interlock" Galvanized	
Crated and nested (all gauges)	75-2½%
Crated and not nested (all gauges)	70-15%
"Milcor" "Titlelock" Uniform	
Blue Stove	
28 gauge, 5 inch U. C. nested	11 00
28 gauge, 6 inch U. C. nested	12 00
28 gauge, 7 inch U. C. nested	14 00
30 gauge, 5 inch U. C. nested	10 00
30 gauge, 6 inch U. C. nested	10 50
30 gauge, 7 inch U. C. nested	13 00

T-Joint Made up	
6-inch, 28 ga.	per 100 32 50

Furnace Pipe	
Double Wall Pipe and Pipe Fittings	40-10%
Single Wall Pipe, Round Iron Pipe Galvanized	40-10%
Galvanized and Black Fittings	40-10%
Milcor Galvanized Pipe and Fittings	40-10%

Lead	
Per 100 lbs.	\$12 50

POKERS, STOVE	
Wrt Steel, str't or bent.	per doz. \$0 75
Nickel Plated, coil handles	per doz. 1 10

POKERS, FURNACE	
Each	\$0 50

PULLEYS	
Furnace Tackle	per doz. \$0 60
per gross	6 00
Furnace Screw (encased)	per doz. 75

Ventilating Register	
Per gross	9 00
Small, per pair	30
Large, per pair	50

PUTTY	
Commercial Putty, 100-lb. kits	\$3 40

QUADRANTS	
Malleable Iron Damper	10%

REDUCERS—Oval Stove Pipe	
Per doz.	
7-8, 1 doz. in carton	\$2 00

BASEBOARD REGISTERS	
Excelsior	50%

FLOOR REGISTERS AND BORDERS	
Cast Iron	20%
Steel and Semi-Steel	40%
In lots less than 50	33¼%
Baseboard	40%
In lots less than 50	33¼%
Adjustable Ceiling Ventilators	40%

Register Faces—Cast and Steel	
Japanned, Bronzed and Plated, 4x6 to 14x14	40%
In lots less than 50	33¼%
Large Register Faces—Cast, 14x14 to 38x42	50%
Large Register Faces—Steel, 14x14 to 38x42	65%
In lots less than 50	60%

RIDGE ROLL	
Milcor Galv., Plain Ridge Roll, b'did	75-10-5%
Galv., Plain Ridge Roll, crated	75-10%
Globe Finials for Ridge Roll	50%

ROOFING	
Per Square	
Best grade, slate surf. prep'd	\$2 30
Best talc surfaced	2 65
Medium talc surfaced	2 90
Light talc surfaced	1 20
Red Rosin Sheeting, per ton	57 00

SCREWS	
Sheet Metal	
No. 7, ½x¼, per gross	\$0 52
No. 10, ¾x1/8, per gross	63
No. 14, ¾x¼, per gross	89

SHEARS, TINNERS' & MACHINISTS'	
Viking	\$22 00

SHOES	
Milcor	
Galv. Std. Gauge, Plain or corg. round flat crimp	65%
28 gauge round flat crimp	40%
24 gauge round flat crimp	10%
Conductor	65%

SNIPS, TINNERS'	
Clover Leaf	40 & 10%
National	40 & 10%
Star	50%
Milcor	Net

SQUARES	
Steel and Iron	Net
(Add for bluing, \$3 per doz. net.)	
Mitre	Net
Try	Net
Try and Bevel	Net
Try and Mitre	Net
Fox's	per doz. \$6 00
Winterbottom's	10%

STOPPERS, FLUE	
Common	per doz. \$1 10
Gem, No. 1	per doz. 1 10
Gem, flat, No. 3	per doz. 1 00

VENTILATORS	
Standard	30 to 40%

WIRE	
Plain annealed wire, No. 8 per 100 lbs.	\$3 06
Galvanized barb wire, per 100 lbs.	3 90
Wire cloth—Black painted, 12-mesh, per 100 sq. ft.	1 75
Cattle Wire—galvanized catch weight spool, per 100 lbs.	3 85
Galvanized Hog Wire, 80 rod spool, per spool	3 34
Galvanized plain wire, No. 9, per 100 lbs.	3 50
Stove Pipe, per stone	1 10

WRINGERS	
No. 790, Guarantee	per doz. \$55 00
No. 770, Bicycle	per doz. 52 50
No. 470, Domestic	per doz. 48 50
No. 110, Brighton	per doz. 43 50
No. 750, Guarantee	per doz. 55 50
No. 740, Bicycle	per doz. 52 50
No. 23, Pioneer	per doz. 39 00
No. 2, Superb	per doz. 39 00

Say you saw it in AMERICAN ARTISAN—Thank you!

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All Sizes and Shapes of Holes
In Steel, Zinc, Brass, Copper, Tinplate, etc.
For All Screening, Ventilating and Draining
EVERYTHING IN PERFORATING METAL

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Any Size in Two Minutes
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JUST take your straight
pipe—fasten the form or
fit to it and in two min-
utes you have your 3 or 4 piece adjustable elbow
all ready for use and any size you want.

PURNELL ELBOW EDGING and CUTTING MACHINE

It is simple, sound and constructed of the very
best materials—both installers and manufacturers
are using it. No more large stock for the in-
staller. Enables you to make adjustable elbows
any size for each job at once when
you need them.

Write today for circular giving com-
plete description and price.

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Range
of
capacity
7 in. to
36 in.
Elbows
of
No. 24
gauge
and
lighter

Whitney Lever Punches

Widest known—Most universally used



Skyline Punch

NEW SKYLIGHT CLOSE CORNER FLANGE PUNCH

Every Sheet Metal Worker Needs One.

Weights Only 10 Lbs.

1-2 Inch Opening Above Die Top.



Skyline
Punch

EASIEST OPERATED
QUICKEST CHANGED
FREQUENTLY PAY FOR THEMSELVES
ON FIRST JOB

Over 40,000 In Use

MADE IN 6 SIZES



Channel Iron Punch

OTHERS FOLLOWING



No. 2 Punch

ASK YOUR JOBBER

OR

Write us, for circu-
lars and prices.

**W. A. Whitney
Mfg. Co.**

715 Park Ave.,
ROCKFORD, ILL.



No. 4 Tinner's Punch



No. 8 Punch

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"Always Reliable"
Torches and Furnaces

THEY have been on the market for just 50
Years. During that time they have built
up a wonderful reputation on quality and
merits.

You should stock them and increase your
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Jobbers supply at factory prices.

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No. 83 Qt. No. 84 Pt.
For Gasoline
Fully Guaranteed

CHICAGO STEEL CORNICE BRAKES

STANDARD OF THE WORLD



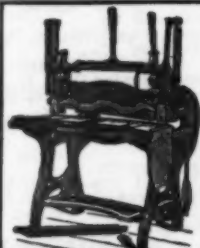
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Made in All Lengths and to Bend All Gauges
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all sizes for hand or belt drive.
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Made of
Keystone
Copper Bearing
Steel



Costs no more
Lasts longer
Therefore
Cheapest

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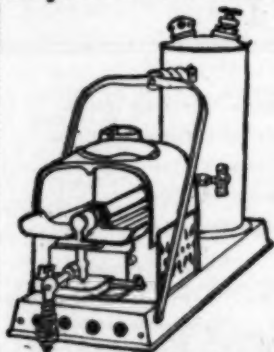
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Fanner Mfg. Co., Cleveland, Ohio
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- Fences.**
American Steel & Wire Co., Chicago, Ill.
- Flue Thimbles.**
Milwaukee Corrugating Co., Milwaukee, Wis.
- Furnace Cement—Asbestos.**
Connors Paint Mfg. Co., Wm., Troy, N. Y.
Milwaukee Corrugating Co., Milwaukee, Wis.
Pecora Paint Co., Philadelphia, Pa.
Sall Mountain Co., Chicago, Ill.
- Furnace Cleaners.**
Sturtevant Co., B. F., Boston, Mass.
- Furnace Fans.**
Sturtevant Co., B. F., Boston, Mass.
Warm Air Furnace Fan Co., The, Cleveland, Ohio
- Furnace Rings.**
Milwaukee Corrugating Co., Milwaukee, Wis.
Walworth Run Fdy. Co., Cleveland, Ohio
- Furnaces—Warm Air.**
American Furnace Co., St. Louis, Mo.
American Foundry & Furnace Co., Bloomington, Ill.
Brillion Iron Works, Brillion, Wis.
Chicago Furnace Supply Co., Chicago, Ill.
Excelsior Steel Furnace Co., Chicago, Ill.
Floral City Heater Co., Monroe, Mich.
Forest City Fdy. & Mfg. Co., Cleveland, Ohio
Gray & Dudley Co., Nashville, Tenn.
Hall-Neal Furnace Co., Indianapolis, Ind.
Henry Furnace & Fdy. Co., Cleveland, Ohio
Hess-Snyder Co., Massillon, Ohio
Homer Furnace Co., Coldwater, Mich.
International Heater Co., Utica, N. Y.
Krusse Co., Indianapolis, Ind.
Lamneck Co., W. E., Columbus, Ohio
Langenberg Mfg. Co., St. Louis, Mo.
Lennox Furnace Co., Marshalltown, Ia.; Syracuse, N. Y.
Liberty Foundry Co., St. Louis, Mo.
Marshalltown Heater Co., Marshalltown, Iowa
May-Fiebeger Furnace Co., Newark, Ohio
Meyer Furnace Co., The, Peoria, Ill.
Monitor Furnace Co., Cincinnati, Ohio
Mt. Vernon Furnace & Mfg. Co., Mt. Vernon, Ill.
Mueller Furnace Co., L. J., Milwaukee, Wis.
Oakland Foundry Co., Belleville, Ill.
Peninsular Stove Co., Detroit, Mich.
Quaker Mfg. Co., Chicago, Ill.
Robinson Furnace Co., Chicago, Ill.
Robinson Furnace Co., A. H., Cleveland, Ohio
Rybolt Heater Co., Ashland, Ohio
Schwab & Sons Co., R. J., Milwaukee, Wis.
Security Stove & Mfg. Co., Kansas City, Mo.
Standard Foundry & Mfg. Co., DeKalb, Ill.
- Standard Furnace & Supply Co.,** Omaha, Neb.
- St. Louis Heating Co.,** St. Louis, Mo.
- Success Heater Mfg. Co.,** Des Moines, Iowa
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- Thatcher Co.,** Chicago, Ill.
- Utica Heater Co.,** Utica, N. Y.
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- Williamson Heater Co.,** Cincinnati, Ohio
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- Hangers—Eaves Trough.**
Berger Co., L. D., Philadelphia, Pa.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Heaters—Cabinet.**
Gray & Dudley Co., Nashville, Tenn.
Mueller Furnace Co., L. J., Milwaukee, Wis.
Peninsular Stove Co., Detroit, Mich.
Waterman-Waterbury Co., Minneapolis, Minn.
- Heaters—School Room.**
Floral City Heater Co., Monroe, Mich.
Meyer Furnace Co., The, Peoria, Ill.
Standard Furnace & Supply Co., Omaha, Neb.
Waterman-Waterbury Co., Minneapolis, Minn.
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- Lath—Expanded Metal.**
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Friedley-Voshardt Co., Chicago, Ill.
Milwaukee Corrugating Co., Milwaukee, Wis.
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Hussey & Co., C. G., Pittsburgh, Pa.
- Nails—Wire.**
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Pecora Paint Co., Philadelphia, Pa.
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Quincy Pattern Co., Quincy, Ill.
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Meyer & Bro. Co., F., Peoria, Ill.
Milwaukee Corrugating Co., Milwaukee, Wis.
Mueller Furnace Co., L. J., Milwaukee, Wis.
Osborn Co., The J. M. & L. A., Cleveland, Ohio
Robinson Furnace Co., Chicago, Ill.
Standard Furnace & Supply Co., Omaha, Neb.
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Meyer & Bro. Co., F., Peoria, Ill.
Milwaukee Corrugating Co., Milwaukee, Wis.
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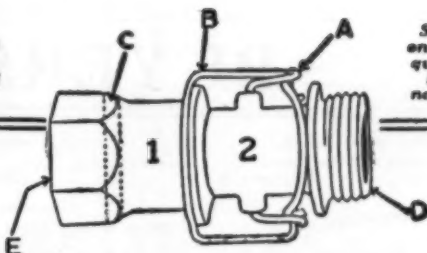
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Whitney Metal Tool Co., Rockford, Ill.
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Gray & Dudley Co., Nashville, Tenn.
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American Wood Register Co., Plymouth, Ind.
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Rock Island Register Co., Rock Island, Ill.
Standard Furnace & Supply Co., Omaha, Neb.
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Tuttle & Bailey Mfg. Co., Chicago, Ill.
Walworth Run Fdy. Co., Cleveland, Ohio
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American Wood Register Co., Plymouth, Ind.
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Eaglesfield Ventilator Co., Indianapolis, Ind.
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Northwestern Stove Repair Co., Chicago, Ill.
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The Kirk-Latty Co., Cleveland, Ohio
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Pecora Paint Co., Philadelphia, Pa.
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Cortright Metal Roofing Co., Philadelphia, Pa.
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Granite City Steel Works, Granite City, Ill.
Inland Steel Co., Chicago, Ill.
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Milwaukee Corrugating Co., Milwaukee, Wis.
National Enameling and Stamping Co., Granite City, Ill.
Osborn Co., The J. M. & L. A., Cleveland, Ohio
Wheeling Corrugating Co., Wheeling, W. Va.
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Inland Steel Co., Chicago, Ill.
Merchant & Evans Co., Philadelphia, Pa.
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National Enameling and Stamping Co., Granite City, Ill.
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Taylor Co., N. & G., Philadelphia, Pa.
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Merchant & Evans Co., Philadelphia, Pa.
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Granite City Steel Works, Granite City, Ill.
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New Jersey Zinc Sales Co., The, New York, N. Y.
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- Shingles—Zinc.**
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WANTS AND SALES

Any yearly subscriber to **AMERICAN ARTISAN** may insert advertisements of not more than fifty words in our Want and Sales Columns **WITHOUT CHARGE**.

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For Sale—Sheet metal and furnace shop. Fully equipped. Established 28 years. Busy all year around. Do \$10,000 to \$12,000 per year. Good location. I have accumulated a fortune and have reached the age where I do not care for business. This is a splendid chance for someone who understands the business. \$2,000 takes it. I can furnish all the references required, banks or supply houses. Address **X-55**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 10-3t

For Sale—Overstocked on brand new well-known high grade furnaces which I bought at an administrator's sale. Will sell at the following prices, as long as stock lasts. These prices are about 25 per cent below the manufacturer's net price. No. 240, \$75 each; No. 245, \$170 each; No. 363, \$64 each; No. 863, \$70 each; No. 372, \$85 each; f. o. b. Hammond, Indiana. Write **H. M. Maginot Sales Co.**, 174 Fayette Street, Hammond, Indiana. 10-3t

For Sale—Account of poor health doctor orders change of climate, so will sacrifice business. Will sell or lease building and tinner's tools. Well established business, 22 years operated. Good location. City of Des Moines, population 160,000. Will trade for Denver or Colorado property or business. Write Northwestern Tin Shop, 506 East Walnut Street, Des Moines, Iowa. 10-1t

Send \$2.00 for pattern and directions for making roof saddle for chimneys. Made out of one sheet of galvanized iron and 2 hours' time and sells easily at \$4.50. When once used, carpenters and masons will use no other method as it saves its price in labor. Address **G. A. Sipma**, Hospers, Iowa. 2-3t

For Sale—Well established plumbing and tinning shop in good town of 1500. Large lot and building, well located, good equipment, plenty of work. Will sell real estate, stock and tools for \$2,500. Good reason for selling. Address **C. W. Filby**, Jefferson, Ashtabula Co., Ohio. 12-3t.

For Sale—Fully equipped plumbing, heating and tin shop. Reasons for selling on account of husband's death. Will sell at a real bargain. Address **Mrs. D. E. Schrader**, Charles City, Iowa. 9-4t

BUSINESS CHANCES

For Sale—In Chicago, tin shop, general sheet metal, furnace and roofing. An established business of years' standing, fully equipped. Ideal location, plenty of work all the year around. Will stand the closest investigation. Poor health forces owner to sell. Address **X-37**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 12-3t

For Sale—Sheet metal and machine shop located in central Iowa city of 17,000 population. Stock and tools for less than half of invoice. Other business interests forces owner to sell. Address **X-64**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

For Sale—Fully equipped sheet metal shop in fastest growing city in California. Santa Monica Sheet Metal Works, 122 Broadway, Santa Monica, California. 10-3t

HELP WANTED

Wanted—A married man not over 45 years of age with family, that would like steady in and outside work in a first class shop. Must be a good roofer and also well able to make and erect any style Skylight, Cornice, Ventilator or Blow Pipe job. Wages \$6.50 per day of 9 hours. Address **P. O. Box 123**, North Emporia, Va. 11-3t

Wanted—Shop man for live hardware store; must have considerable sheet metal and furnace experience. Knowledge of windmill, pump and engine repairing desirable. A fine opportunity for right man. Illinois town of 4,000 in rich farming district. Address **X-63**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Ill. 13-3t

Wanted—At once, experienced tinner who can install furnaces, put up eave-trough and general repairing. Steady work. State wages wanted in first letter. Address **Wendt & Feichler**, 318-320 River Street, Dundee, Illinois. (Located in the Fox River Valley.) 11-3t

Wanted—All around first class tinner and furnace man, one who can draft out own patterns. Must have good references. Steady job for right man. Address **X-63**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 10-3t

Wanted—Tinner to take entire charge of shop. Must have small amount of capital to invest. A real opportunity for a hustler, with old established concern. Address **X-56**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 10-1t

Wanted—At once, a man who can do furnace installing, eaves spouting, also plumbing. In town of 2,000. State experience, age, married or single, and wages expected in your reply. Address **A. C. Buzard**, Holly, Michigan. 12-3t

Wanted—High class salesman and outside foreman for roofing and sheet metal business in South; also two good sheet metal workers. Address **X-62**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

Wanted—At once, experienced tinner who can install furnaces, put up eave trough and do general repairing in a college town of 2,000 inhabitants. Steady job. State wages in replying. **Curtman & Son**, Tarkio, Missouri. 13-3t

Wanted—Good tinner for general job work. Capable of measuring up, making up and installing work. Address **Ben Callahan**, 200 North Adolph Ave., Akron, Ohio. 12-3t

Wanted—At once, Furnace installer and sheet metal worker. State age and wages wanted in first letter. Address **C. F. Tolg & Son**, 238 Broadway, Waukesha, Wisconsin. 13-3t

Wanted—At once, an experienced all around sheet metal worker and furnace man. Address **M. G. Coffey**, Polo, Illinois. 10-3t

SITUATION WANTED

Situation Wanted—As traveling salesman for some good furnace company. Have had road experience; also have been in the installation game for a number of years. Am a good estimator and can furnish good references. Will be ready Jan. 1, 1927, to start work, as I am now engaged until December. Address **Leonard Snowden**, 634 Beverly Ave., Macomb, Illinois. 13-3t

Situation Wanted—By first-class plumber, hot water and steamfitter with full set of tools. A position where he can work himself into an interest in the business. Can estimate all of the above work. I would also consider running shop with commission basis. Address **X-58**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 11-3t

Situation Wanted—By a sheet metal worker, who has 25 years' experience. Non-union man, wishes to hear from a reliable concern, along the western coast states. Have handled in and outside work, pattern cutting and layout, general sheet metal work light and heavy. Address **C. H.**, 433 Wall St., Los Angeles, California. 11-3t

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Situation Wanted—By married man, all round mechanic. Can figure and estimate work or sell, also keep books. Have had experience in hardware line. Would like working interest. Southern Michigan preferred. Address **X-54**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 10-3t

Situation Wanted—By A-1 mechanic on sheet metal and furnace work. Can also do plumbing. Have had 16 years' experience. Can handle shop and sell. Nothing but a steady job considered. Also prefer southern Michigan. Address **X-61**, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 13-3t

Situation Wanted—Plumber, steam fitter with some knowledge of tinning wants steady position. Married. Will go anywhere. State particulars as to wages and housekeeping rooms. Wire or write **William Gross**, 205 W. Seventh St., Tama, Iowa. 9-3t

Situation Wanted—First class tinner, plumber and furnace man would prefer a hardware store. Can do anything that comes in any shop. Would like a year around position. State wages in first letter. Address **Box 436**, Mandan, North Dakota. 10-3t

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Situation Wanted—Experienced tin and sheet metal worker and hot air furnace man. Have had 30 years' experience. Prefer work in Iowa, Wisconsin or any midwestern state. Address **P. O. Box 284**, Clermont, Iowa. 10-2t

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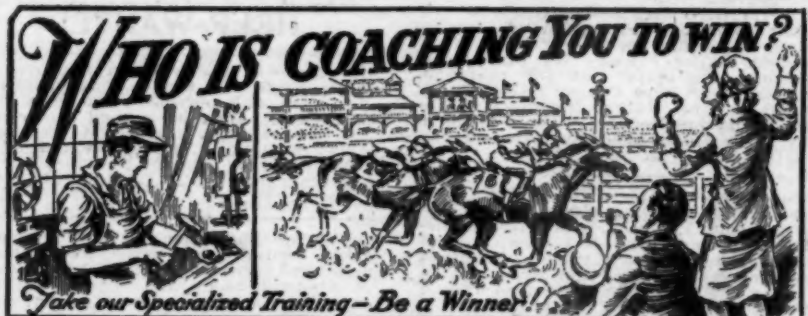
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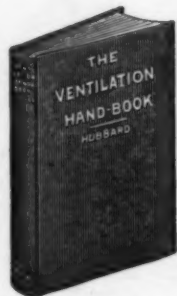
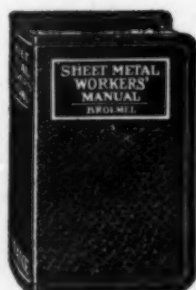
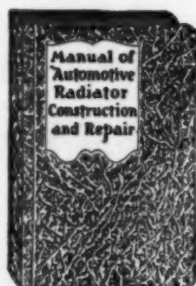
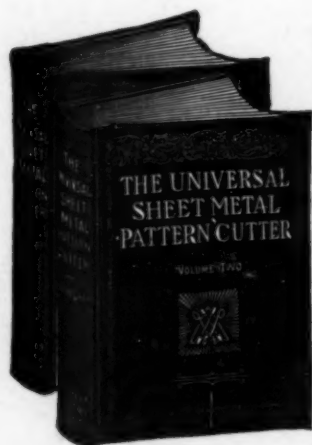
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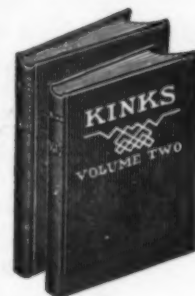
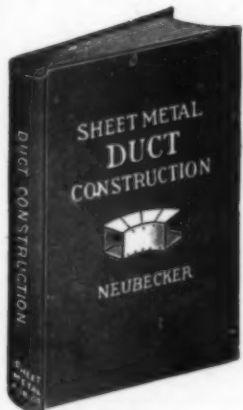
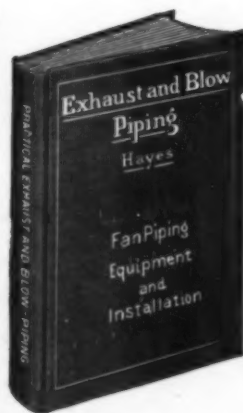
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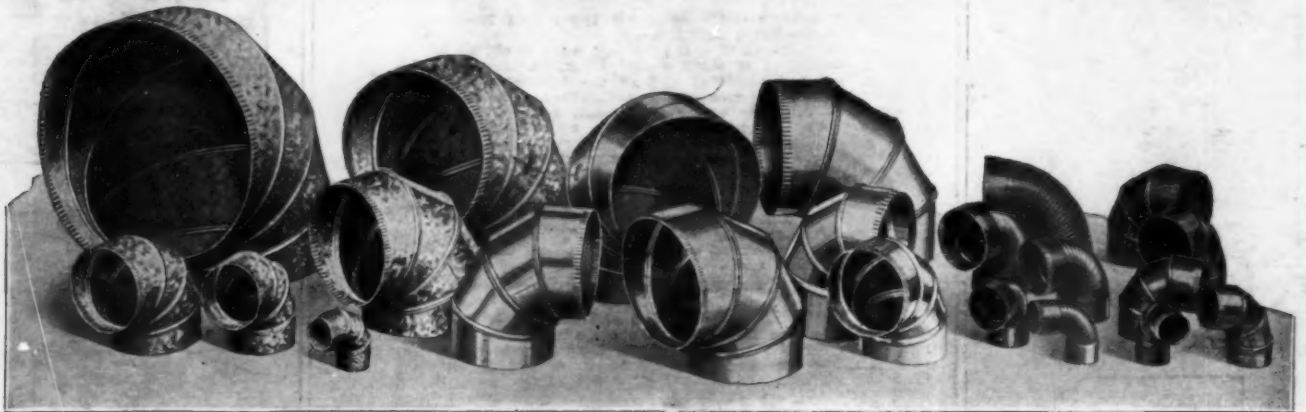
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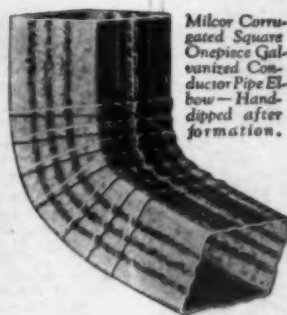
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